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TWO TOOLS IN ONE

The Baker Rotary Wall Scraper is really "Two Tools in One" . . . a Wall Scraper and a Wall Sampler. When equipped with Scraper Blades, making the tool a Baker Rotary Wall Scraper (see Fig. 1), it provides a safe, efficient means of enlarging the walls of an open hole to a diameter considerably greater than the casing or hole through which the tool is run. The Baker Wall Scraper has a remarkable reaming capacity in relation to the O. D. of the tool—the expansion range being from 4" to 36". Correct design and the use of alloy steels has resulted in the Baker Wall Scraper having tremendous strength.

CONVERTED INTO BAKER ROTARY WALL SAMPLER

Merely substituting special Sampler Blades for the Scraper Blades converts Wall Scraper into a Baker Rotary Wall Sampler (See Fig. 2). With this device it is possible to take actual cores from the side walls of any uncased hole at any depth, thus opening up new opportunities for restoring lost core records, or for checking formations which were not cored when drilled through. This conversion feature, resulting in "Two Tools in One," is a combination that means *double value*.

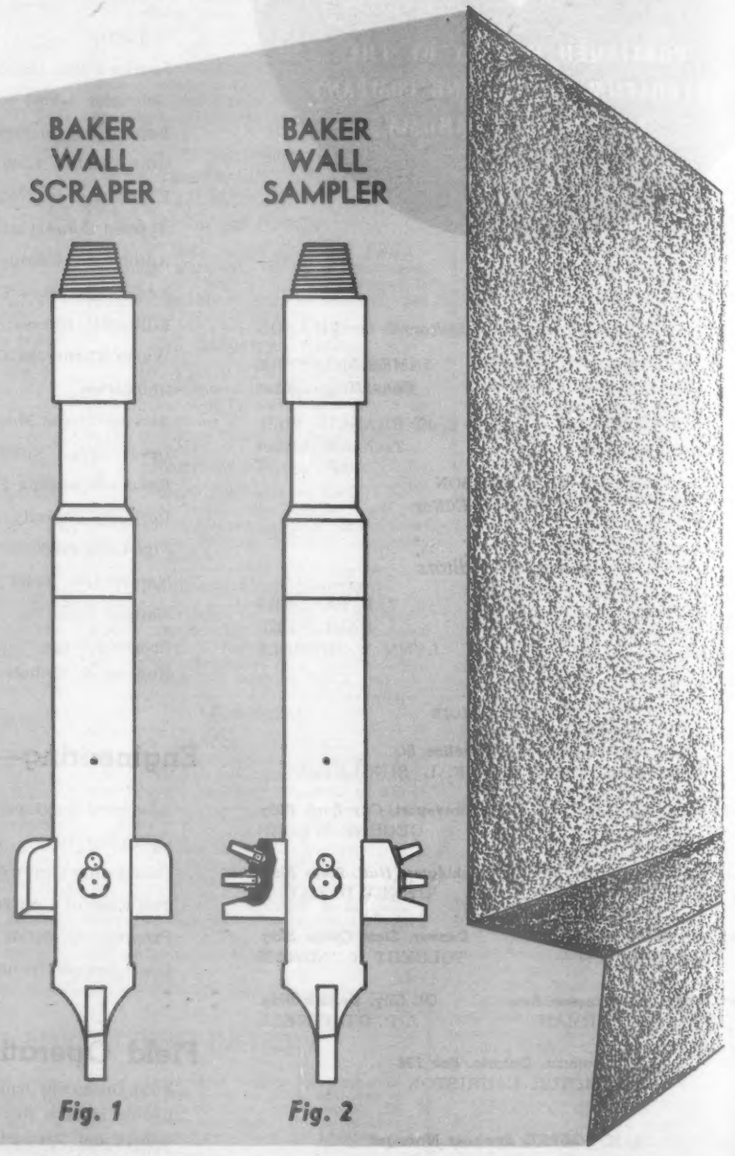


Fig. 1 *Fig. 2*

Send for Baker Broadcast No. 19, describing and illustrating these applications

BAKER OIL TOOLS, INC.

HUNTINGTON PARK, CALIFORNIA
HOUSTON, TEXAS

BAKER WALL SCRAPER APPLICATIONS

- ★ *Cutting Out Sections of Drillable Pipe.*
- ★ *Enlarging Holes for Casing.*
- ★ *Enlarging Holes for Gravel Packing.*
- ★ *Bottlenecking for Cement Jobs.*
- ★ *Cleaning up Oil Sands.*
- ★ *Setting Cement Plugs.*
- ★ *Directional Drilling.*
- ★ *Water Shut-Off Tests.*
- ★ *Setting Liners.*

Trends

New Developments Will Have Bearing on Future Course

THE oil industry in the past few days has been confronted with an unusual number of developments which will have important bearing on its operations over the remainder of this year and later. At Washington a new neutrality law will complicate, temporarily at least, the movement of petroleum products from this country to warring nations and to many neutrals. The State Department completed a long-pending trade agreement with Venezuela involving reductions in existing tariffs on heavy oils, which probably will mean increased imports of low-gravity crudes and heavy fuel oils into this country starting next month.

CRUDE PRODUCTION *3,498,024 bbl. daily average—down 1,437 bbl. One year ago 3,639,151 bbl.*

CRUDE STOCKS *230,453,000 bbl. as of October 28—up 1,326,000 bbl. One year ago 275,824,000 bbl.*

GASOLINE STOCKS *72,660,000 bbl. as of October 28—up 538,000 bbl. One year ago 69,259,000 bbl.*

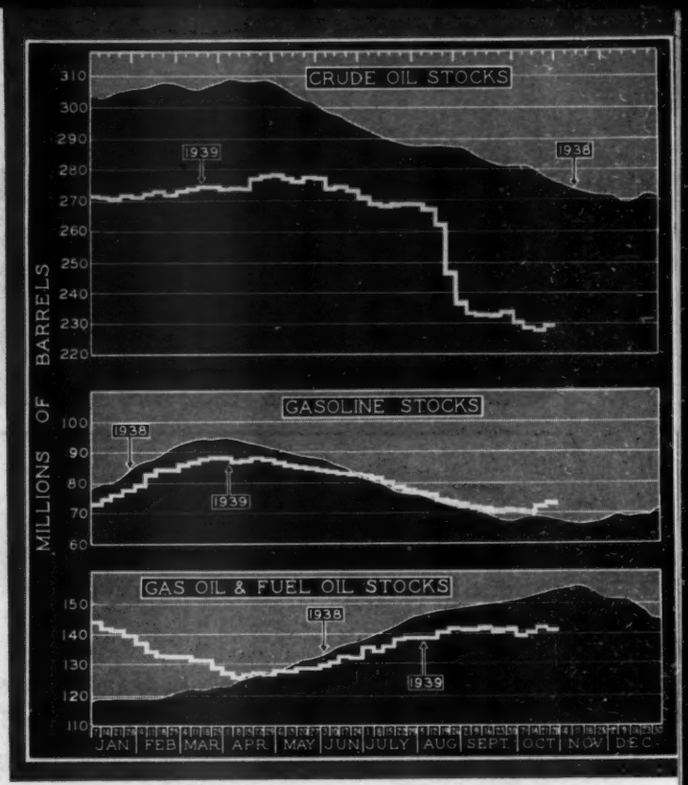
GAS AND FUEL-OIL STOCKS *140,854,000 bbl. as of October 28 — down 642,000 bbl. One year ago 153,355,000 bbl.*

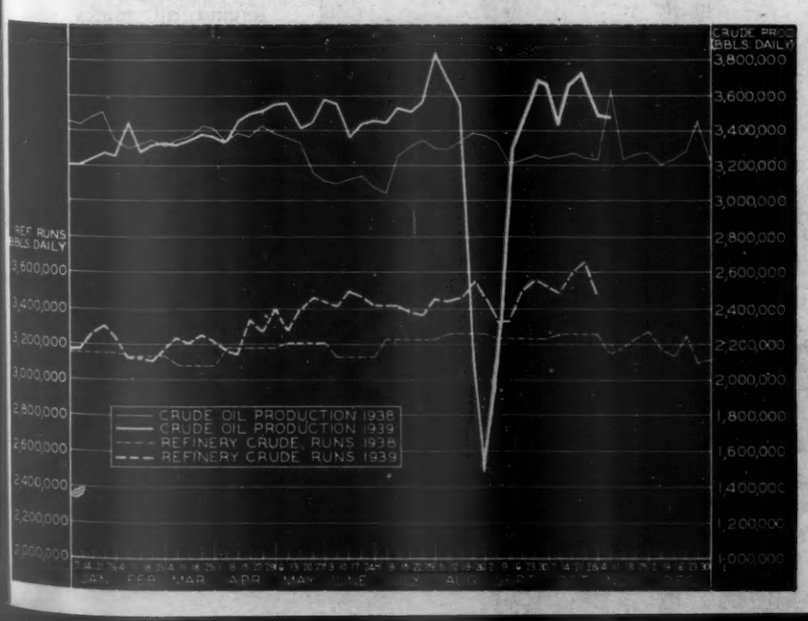
REFINERY RUNS *3,520,000 bbl. daily week ending October 28—down 130,000 bbl. One year ago 3,251,000 bbl.*

(Later A.P.I. figures on refinery stocks and runs not available owing to New York election holiday.)

At New Orleans, a Circuit Court of Appeals upheld the Rowan-Nichols decision, involving East Texas proration, with comments which indicated that important changes must be made in the application of conservation in Texas before it is legal proof. Finally, following close on the heels of Mississippi's first oil discovery, Nebraska apparently has joined the list of oil-producing states and at the same time has given hope to those who have the ownership of millions of acres under lease in the Forest City basin located in Iowa, Nebraska, Missouri and Kansas.

Passage of the neutrality act has been assured for several weeks, and operators of petroleum tankers are as prepared as they could be for the application of the act. Those who have made a study of the problem are in agreement that in time adjustments can be made in world shipping so that the Allies will be able to purchase and carry their petroleum requirements in their own boats. It probably means further delays in the resumption of the normal export movement of products from Gulf Coast and Atlantic seaboard refineries, which in recent weeks has been below the level of last summer.




CRUDE PROD. BBLS. DAILY
REF. RUNS BBLS. DAILY
CRUDE OIL PRODUCTION 1938
CRUDE OIL PRODUCTION 1939
REFINERY CRUDE RUNS 1938
REFINERY CRUDE RUNS 1939

DAILY AVERAGE PRODUCTION FOR WEEK

	Nov. 4, 1939	Bur. Mines Nov. est. of demand	Nov. state allowables	Oct. 28, 1939
Oklahoma City	87,275	.....	.....	95,425
Seminole fields	38,600	.....	.....	38,525
Remainder of state	289,175	.....	.....	285,550
Total Oklahoma	415,050	429,000	429,000	419,500
East Texas	396,092	.....	.....	395,496
West Texas	218,544	.....	.....	208,586
North Central Texas	109,346	.....	.....	103,607
Texas Panhandle	77,096	.....	.....	64,000
East Central Texas	85,390	.....	.....	83,546
Gulf Coast Texas	319,412	.....	.....	317,442
Southwest Texas	79,543	.....	.....	78,198
Total Texas	1,285,423	1,444,000	1,398,225	1,250,875
North Louisiana	64,990	.....	.....	65,720
Gulf Coast Louisiana	204,090	.....	.....	199,142
Total Louisiana	269,080	259,000	258,994	264,862
California	600,250	596,000	599,000	606,850
Kansas	173,250	169,000	170,600	187,200
Arkansas	66,800	57,000	68,952	65,875
Eastern fields	103,500	106,000	.....	102,000
Illinois	326,580	303,000	.....	338,755
Michigan	62,251	63,000	.....	63,964
New Mexico	114,700	111,000	111,000	114,890
Rocky Mountain area	81,140	83,000	.....	84,090
Total United States	3,498,024	3,620,000	.....	3,499,461

Justification for the 50 per cent reduction in existing tariff rates on crude-oil and fuel-oil products imported from Venezuela, aside from the promotion of South American trade, will be based on the contention that it will tend to conserve oil reserves in this country by allowing a larger percentage of the "nonessential" fuel-oil uses to be furnished from the outside. The present tariff of 2 cents per gallon on gasoline and kerosene, which has effectively kept out petroleum imports of these products into this country since 1932, will not be lowered.

Marketwise there has been improvement in the demand for furnace oils reflecting the cooler weather. Most changes in refinery gasolines the past week have been on the down side. Lubricants and petroleum wax continue strong in both domestic and export markets.

SPARKS . . . FROM THE NEWS

STEALS THE SHOW: With attention centered on Kansas and Missouri tests, Nebraska quietly takes the newspaper headlines with what appears to be the first commercial production in the Forest City basin.

WARNING: Automotive engineers, members of the professional society, meeting in annual convention last week, cautioned the oil fraternity that it might expect a demand for still higher octane fuels than the 100-octane now available.

ARITHMETIC: Regular-grade gasoline is retailing for 11.9 cents in Oklahoma City. Federal and state taxes are 5 cents, inspection fee .08 cent and the margin for rail transportation and wholesale and retail marketing should be at least 5 cents. That leaves 1.82 cents per gallon for the refiner.

ANOTHER ADJUSTMENT: As is usually the case with Washington legislation, no thought was given as to the effect of the new neutrality act on the oil industry in this and other countries which will have to adjust its operations as best it can.

HEAVY OIL: The trade agreement with Venezuela approved Monday apparently will mean that larger quantities of low-gravity crude and fuel oil will be imported into this country starting December 16. The domestic markets for these products have been particularly strong recently.

WAITING: Refiners in the interior areas who thought the war would provide a gasoline market realize now they may have a long wait.

BEHIND THE SCENES: It is hoped that the Cole committee, whose hearings started Monday, will draw back the curtain so that the industry can find out who is really behind this proposed extension of federal control.

BLACKOUT: The lid has been clamped on information about American refineries in Europe, a precaution the companies are taking against information reaching belligerents which might be interpreted as unfriendly.

CONSERVATION: A bouquet of orchids and satisfactory profits to operators in the Magnolia field in Arkansas for their subscription to an intelligent, practical conservation program. The program might well be a model for other fields.

IN LINE: Following the lead of the Middle West and East, a major company announces plans to build the first gasoline pipe line to serve important consuming points in the southeastern part of the United States. The industry is a long way from the saturation point in the construction of these gasoline transporters.

NEW GUIDEPOST: Upholding the decision of a lower court in the Rowan-Nichols, East Texas, proration case, the Circuit Court of Appeals at New Orleans planted another signpost pointing the way to state bodies in the application of conservation regulations.

TWENTIETH: A brilliant program has been arranged for the A.P.I. convention next week, when the Institute will celebrate its twentieth birthday. A bumper attendance is expected.

MARINE SCENE ON TEXAS GULF COAST . . .

Silhouetted against the clouds, and offshore in a placid bay, this derrick affords an interesting contrast in light and shadows. It is Sinclair's No. 3, on state land at White Point, Tex.

MORE RATIONING: The latest in European rationing of petroleum comes from Germany, where an order has been issued forcing all trucks and tractors in civilian service to use coal oil, made from coal, as fuel.

PEACE DEMAND: Statements by Texas Railroad Commission members visiting Washington indicate many do not realize increases in petroleum demand in recent weeks are due to improved domestic business—not the war.

Rig at Pawnee Royalty Co.'s No. 1 Boice, near Falls City, Neb., first oil discovery in the Forest City basin

Nebraska's First

First oil well in Nebraska: Pawnee Royalty Co.'s No. 1 Boice, near Falls City, Richardson County.

First oil well in the Forest City basin of Missouri, Kansas, Iowa and Nebraska.

Producing horizon: Hunton lime at 2,288-91 ft.

Estimated production: 75 to 200 bbl. daily.

Bonus: Operators may receive state award of $15,000 if daily production of 50 bbl. or more is maintained for 30 days.

Geology: Said to be first Forest City basin well drilled on seismograph structure.

By DAL DALRYMPLE

Nebraska Added to List of Oil-Producing States

FALLS CITY, Neb., Nov. 7.—Add Nebraska to the oil-producing states, for the first oil in commercial quantities in the Forest City basin was found in Hunton lime at a wildcat 3½ miles west of this little city in the extreme southeastern corner of the state.

To the Pawnee Royalty Co., operator, and Ferndale Drilling Co., contractor, both of Odessa, Tex., goes the distinction of the first discovery in the basin. As a reward, the operators are hoping to receive the $15,000 offered by the state for the first Nebraska well producing as much as 50 bbl. of oil daily for 30 days.

The discovery well is No. 1 Boice, C NE NE Section 18-1n-16e, Richardson County, about 4 miles north of the Kansas line. The drill entered Hunton-lime pay at 2,288 ft., corrected measurement, and drilled 3 ft. into the pay about 2 p.m., November 1. Oil began filling the hole, rising 1,100 ft. in the first 12 hours. It rose an additional 400 ft. in the next 12 hours, then 400 ft. in 7 hours, and 50 ft. in 6 hours, standing at 1,950 ft. at the end of 37 hours. It continued rising and at the end of 58 hours was slopping over the casing head and running through reducing nipple and 3-in. pipe into the slush pit at the rate of ½ to 1 bbl. an hour.

Estimates of production, based on this fill-up, ranged from 75 to 200 bbl. daily, with most observers believing it would be good for at least 100 bbl. daily, naturally. Very little gas was showing with the oil.

Three 500-bbl. tanks were erected, 2½-in. tubing and rods were run, and the crew began cleaning out and pumping oil late Monday afternoon. The pump had a capacity of 15 bbl. an hour. Exact potential rating of the well must await completion of the pumping test. It was the opinion of some oil men it could be made a flowing well by acidizing or shooting the lime, but the operators apparently were content to test natural production by pumping.

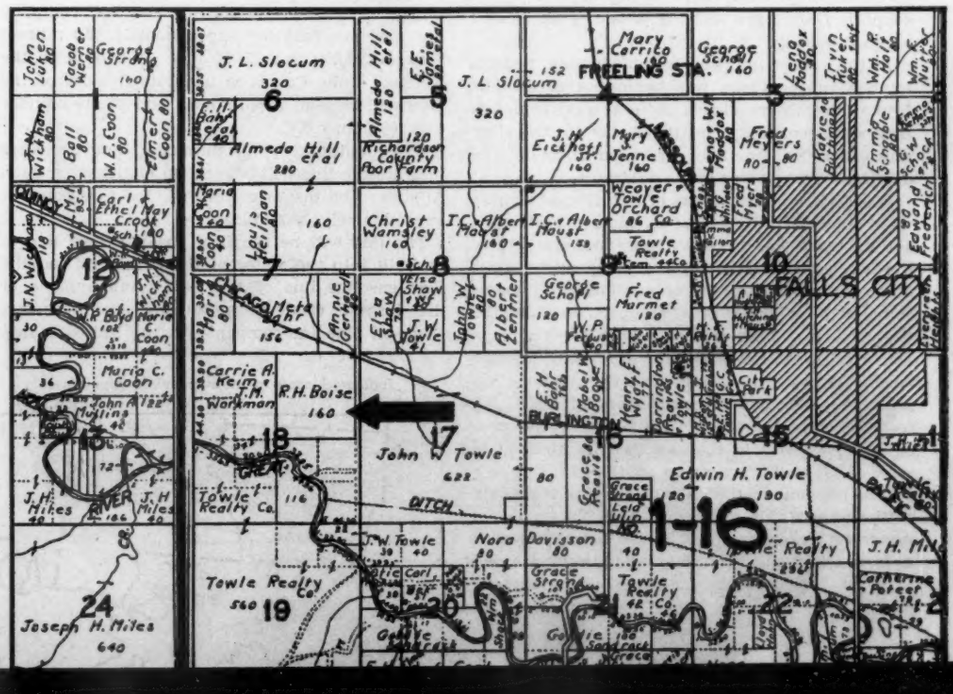
Gravity of the oil was said to be better than 30° at a temperature of 72°.

The discovery well was drilled without major company support, and was given but haphazard attention by oil men generally as drilling progressed. W. B. Guinn, president of Pawnee Royalty Co., and his brother, B. G. Guinn, both of Odessa, Tex., were said to be the only financial backers of the wildcat. They assembled a block of about 60,000 acres of leases in Richardson County, Nebraska, and about 15,000 acres in Brown County, Kansas, immediately to the south. B. P. Eidson, lease broker associated with Guinn Brothers, began assembling the Pawnee company's block more than a year ago, during the heyday of the Forest City basin lease boom.

Albert Ladner, geologist with Texas Co. for 10 years, left that organization to join Guinn Brothers in their Nebraska venture. He took a seismograph crew of Apache Exploration Co. into Richardson County and began a geophysical survey about the middle of last April, completing the work in July. Location for No. 1 Boice was made on his recommendation last August 26 and the well was spudded September 6.

It was said to be the first well drilled in the Forest City basin on seismograph surveys, or on other than surface geology.

Arab Petroleum Co., Robert Garland and others drilled a Richardson County wildcat at No. 1 Ogle, SE SE Section 9-1n-14e, about 10 miles west of No. 1 Boice, in 1937. It found Viola lime at 3,022 ft. and drilled 228 ft. in that formation, with some oil showings. It was drilled to Wilcox sand and had a hole full of water at around 3,500 ft., and efforts to plug back, acidize and test Viola-lime showings failed because the water could not be shut off. Mississippian, Silurian and Devonian



Arrow shows location of Nebraska's first oil well, on the Boice farm west of Falls City. Map courtesy Mid-continent Map Co., Tulsa, and Tulsa Tribune

sections above the Viola were found relatively thin in the Arab test. The Pawnee company's discovery well checks about 600 ft. higher structurally than the Arab test. Two or three other wildcats have been drilled in the county, but although some oil showings were reported, all were failures. Showings of oil in Viola lime and other lower formations in these earlier tests indicate production may be found in the lower zones at No. 1 Boice, if the discovery well is drilled deeper.

The strike at Falls City came as a tonic, a "shot in the arm" for the Forest City basin, the big Missouri-Kansas-Iowa-Nebraska district that was beginning to suffer from completion of numerous dry holes.

The basin was the scene of one of the major lease plays of petroleum history in 1938. Attention was drawn to it as a possible oil area with the publication of a geological study of the northeastern Kansas sector of that area by the Kansas State Geological Survey. Dr. Raymond C. Moore, Kansas State geologist, and Dr. Kenneth K. Landes, assistant state geologist, then pointed out that formations productive in western Kansas were present in the Forest City basin and recommended they be tested. A few oil operators went into the basin about that time and began quietly assembling leases, mostly in Missouri, Kansas and Iowa, with less attention to Nebraska.

The big activity did not get under way, however, until the publication on August 11, 1938, of a geological article on the Forest City basin by W. G. Osborn, geologist, of Douds, Iowa. Mr. Osborn, who had spent many years studying the Forest City district, compared it with the highly productive Illinois basin and found them similar.

It is estimated that 3,000,000 or more acres were leased in Missouri. About 500,000 acres or more were taken in northeastern Kansas and 600,000 to 750,000 acres were leased in Iowa-Nebraska sectors.

The first test to be started in or on the rim of the basin following the lease boom was at W. M. McKnab's No. 1 Fritz, SW SE NW Section 4-12-14, near Topeka in the far southwestern part of the basin. The next basin test to get started was J. H. Everitt and others' No. 1 Spring, SW SW SE Section 30-62n-38w, at Mound City, Holt County, Missouri, about 25 miles northeast of the Nebraska discovery. The McKnab wildcat was spudded last January; the Everitt test in March. Both were dry, although several showings of oil were reported at the Everitt well. During the past year more than a score of failures have been completed in the basin, mostly in Missouri. Some gas was found, but no oil. All wells were drilled by independent operators, only two or three having major-company support. Only a few tests, it is said, were located on good geology.

At the end of the first year of drilling, general interest in the basin was beginning to decline. New wildcats were started about as quickly as failures were completed, but there was not the stimulus generated by a discovery to spur them on. The drilling campaign was in the doldrums.

It is different now. News of the Nebraska strike was followed by a rush of oil men to Falls City, and the boom was on anew. Lease brokers, royalty buyers, geologists, land men, independent operators, scouts, and other representatives of major companies are here in great numbers, watching the testing at No. 1 Boice, trading, trying to buy acreage and royalty, talking of additional tests. Lease and royalty prices are soaring. The true oil-boom atmosphere prevails. Announcement of additional tests are expected soon. W. B. Osborn, the geologist whose faith in the basin seems justified in view of the Falls City strike, said:

"The outcome of the Falls City strike is already sufficiently certain to guarantee the eventual and successful development of a new producing area as large as a single state, and perhaps much larger."

Import Taxes on Venezuelan Crude and Fuel Oil Halved

WASHINGTON, D. C., Nov. 6.—The excise tax on imported crude petroleum and fuel oil is cut in half on imports totaling 5 per cent of domestic crude oil processed annually in the reciprocal trade agreement with Venezuela signed today and effective December 16.

The agreement also pledges the United States not to place any duty on imports of crude petroleum and fuel oil, nor to increase the import excise tax during the life of the agreement, which will run for 3 years and thereafter until terminated by either country on 6-month notice. It also binds the United States against imposing either duty or import tax on crude petroleum and fuel oil used for ship supplies which are at present tax free and are also bound on the free list by the trade agreement with the United Kingdom.

The reduced import tax of ¼ cent per gallon on crude petroleum and fuel oil, including gas oil and topped crude petroleum, will apply to imports from all countries not to exceed in any calendar year 5 per cent of the total quantity of crude petroleum processed in refineries in continental United States during the preceding calendar year. Imports in excess of the quota will pay the tax of ½ cent per gallon, which is bound against increase. There is no reduction in the tax on other petroleum products. The quota applies to the combined imports of crude petroleum, topped crude, and fuel oil including gas oil, and there is no separate quota for each of these commodities. Based on 1938 domestic refining, the 5 per cent quota would apply to imports of 58,251,000 bbl. whereas the average annual imports of taxable crude and topped petroleum and fuel oil from 1933 to 1938 were 34,569,000 bbl.

Venezuela is the most important supplier of United States imports of crude petroleum, accounting for 85 per cent of the total of 1937 and 90 per cent in 1938. Imports of fuel oil are supplied almost entirely by Netherland West Indies, but most of this is refined from Venezuelan crude. In support of the tax cut, the State Department declared that Venezuelan crude is much heavier than domestic, yields principally heavy fuel oil, and that use of heavy fuel oil from foreign crudes reserves high-grade domestic crudes for production of the more valuable derivatives.

"The United States share of the known world reserves of crude petroleum is somewhat less than 50 per cent," the State Department declared in a statement on the new treaty. "On the other hand, this country produces slightly over 60 per cent of the world output notwithstanding the principal domestic fields are being operated under restrictions to avoid wasteful production."

Gulf Will Build Gasoline Line From Florida to Atlanta

THE Gulf Refining Co., transportation, refining and marketing subsidiary of Gulf Oil Corp., is completing plans to build a gasoline line extending from a terminal at St. Joe, Fla., on the Gulf Coast, to Atlanta, Ga., the center of a large consuming area in the southeastern part of the United States.

Details of the construction and operating plans have not been announced by the Gulf company. It was reported last week that the Gulf company has placed orders for approximately 450 miles—between 23,000 and 25,000 tons—of pipe with the National Tube Co. It is understood most of the pipe will be 8-in. (8⅝-in. o.d.) and the remainder 6-in. (6⅝-in. o.d.).

The quantity of pipe purchased and the sizes indicate the line will connect to points other than Atlanta. The distance from St. Joe to Atlanta is approximately 300 miles.

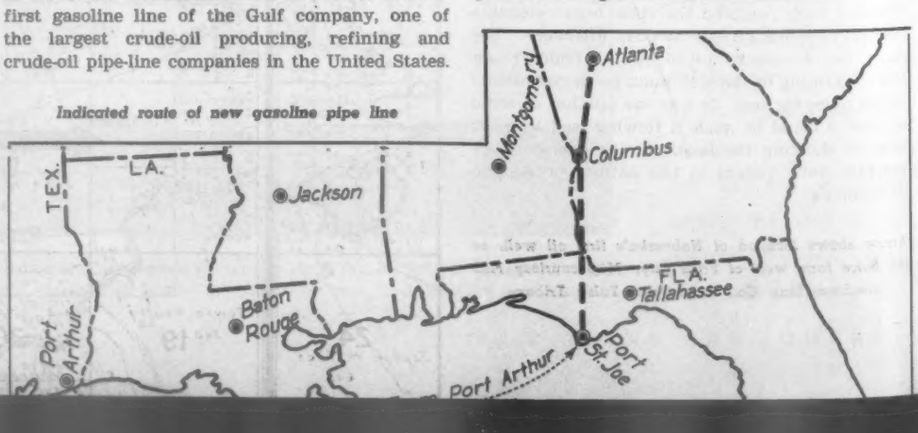
The line will be the first gasoline pipe line to be built into the states of the Southeast and the first gasoline line of the Gulf company, one of the largest crude-oil producing, refining and crude-oil pipe-line companies in the United States.

With a steady expansion of gasoline pipe-line systems under way in the middle western and eastern part of the United States over the past 10 years, those familiar with marketing and transportation conditions have predicted that eventually lines would be built connecting to large consuming points in the Southeast. At present this area obtains most of its petroleum products in rail shipments from terminals along the Gulf Coast and Atlantic seaboard. Products are also shipped from Arkansas and Louisiana refineries.

These rail shipments on gasoline for the most part range from 1 to 2 cents per gallon on gasoline and other light products.

The Gulf company's refinery at Port Arthur, Tex., will be the source of supply for the new pipe line. The refinery is complete in its operations and has a rated crude-oil capacity of 125,000 bbl. daily. The company has other refineries at Fort Worth, Sweetwater, Staten Island, Philadelphia, Pittsburgh, Toledo, and Cincinnati.

Indicated route of new gasoline pipe line



Effect of New Neutrality Law on Oil Industry

By HENRY D. RALPH

WASHINGTON, D. C., Nov. 6.—The neutrality act, which was signed by the president on Saturday, will mean major adjustments in the tanker movement of petroleum from this and other countries. The new act in effect will keep tankers of American registry from the war areas and also serve to restrict the movement of American bottoms to many neutral countries. The cash-and-carry provision of the law will also necessitate changes in the usual peacetime shipment of petroleum products from this country.

It is predicted that the immediate reaction of the new act will be to take a number of tankers of American registry out of service. It is believed that gradually these tankers will be returned to service in shipment to neutral countries which do not come under the ban of the neutrality act. This in turn will relieve French and British tankers now engaged in that trade and they will be available for the transportation of petroleum products from this and other oil countries to France and England. A few weeks may be required to bring about these changes, resulting in the meanwhile in a curtailment of the export movement of petroleum products from this country.

A large part of the world tankers are of American, British and Norwegian registry as shown by the following table based on 1939 data obtained from Lloyd's Register for vessels of 1,000 gross tons:

	1939	1938
Great Britain and Dominions	3,264,241	3,013,687
United States and America	2,800,780	2,758,642
Norway	2,117,381	1,972,469
Netherlands	537,564	561,946
Panama	469,664	450,261
Japan	429,790	345,849
Italy	426,002	380,488
France	317,913	241,896
Germany	256,093	202,221
Sweden	158,815	144,899
Other countries	658,637	643,322
Total	11,436,880	10,715,680

High points of the law are that it prevents American-flag vessels from trading with belligerents in the North Atlantic and from going to neutral ports in areas designated by the president as combat zones; and that it prevents shipment of American goods to belligerents on credit or until American title and interest has passed to some foreign government or national.

The law repeals the embargo on sales of arms, ammunition, and implements of war to belligerents, but continues an export-license control over such commodities. The president is given power to designate commodities coming within this classification, and there is nothing in the law to prevent him from classifying petroleum as an implement of war if so recommended by the National Munitions Control Board; but there is no present indication that petroleum will be placed under license control.

It is now unlawful for any American vessel to carry any passengers or any articles or materials whatever to any nation at war, specifically Germany, England, and France. There are exemptions, however, which permit American-flag ships to trade with parts of the British and French empires outside of the North Atlantic, even though these dominions and possessions are legally at war. These exemptions include transportation by land, air, or inland waterways to territory bordering on the United States, which means Canada. American-flag ships are prohibited from going to British or French ports in the North Atlantic north and east of a line running south from the middle of Nova Scotia to a point in the ocean opposite North Carolina, thence due east to a point south of the Azores, where it jogs south and then east to touch the coast of Africa just north of the Canary Islands at about the boundary between French Morocco and Spanish Rio de Oro. Halifax is in the forbidden zone, but St. John, N. B., is open to American ships. American ships may also go to the British Bermuda Islands, British and French Caribbean possessions, and British and French African possessions except those touching the Mediterranean.

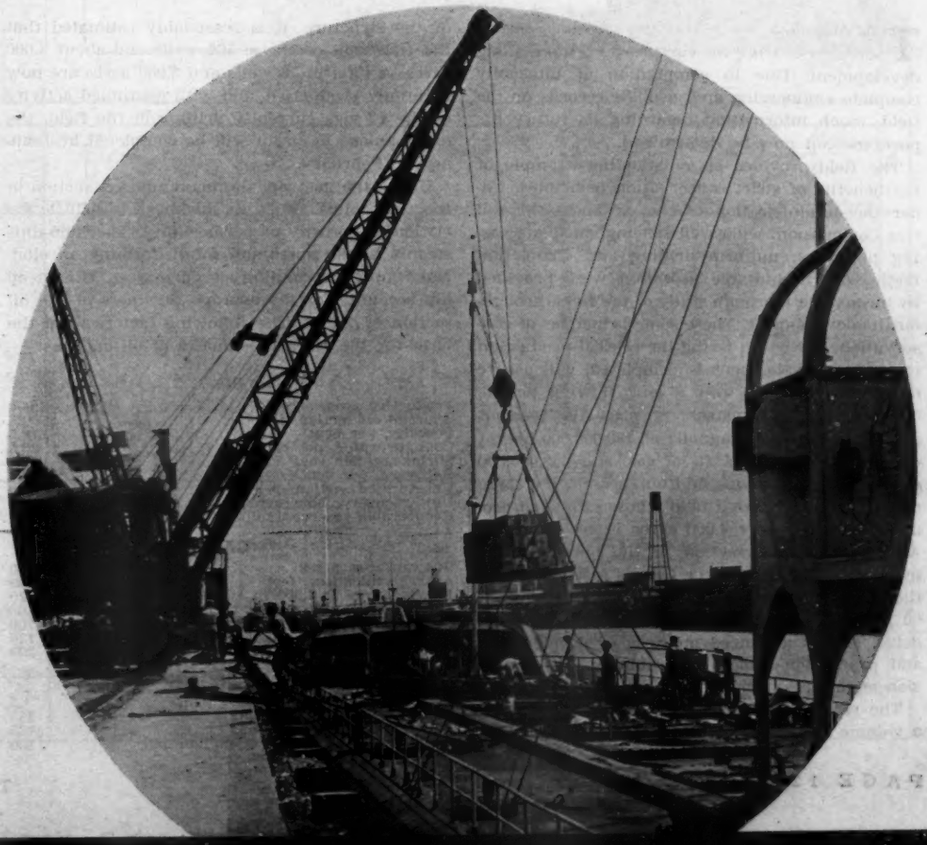
Inside this North Atlantic prohibited zone American tankers and other ships may continue to ply to neutral ports, except as the president by proclamation may define certain waters as combat areas, in which case American ships would be excluded. Thus, if the North Sea, Baltic Sea, and English Channel are proclaimed to be combat areas, American ships could not serve ports in Denmark, Sweden, Belgium, and Holland. The president also has power to proclaim combat areas outside of the North Atlantic anywhere in the world, in which case American ships could be prohibited from entering these waters when bound either to belligerent or neutral ports. At present there is little probability that the Mediterranean Sea will be designated a combat area, so that American tankers could continue to trade in that area, except to French Mediterranean ports and such French and British Mediterranean possessions as Algeria and Malta.

A large percentage of exports of American oil is carried in ships of foreign registry, many of which are owned by American companies, and such vessels, of course, are not affected by the neutrality act.

The cash-sales provision of the law also affects the oil industry and may create a particular hardship on American corporations with subsidiaries in belligerent countries, since they will no longer be permitted to export oil products on credit.

It is now unlawful to export any commodity from the United States to a belligerent nation until all right, title, and interest therein shall have been transferred to some foreign country, agency, in-

(Continued on Page 84)



These pictures depict scenes in the active Magnolia field, Arkansas' greatest reserve. At left a camp is being erected; lower left is a drilling well and below is a flowing well

Applied Conservation Assures Magnolia Large Recovery

Wide well-spacing, adequate casing programs, uniform drilling and completion methods and equitable proration in Arkansas' Magnolia field assure maximum recovery over long flow period

BY GEORGE WEBER

THE Magnolia field, Arkansas' greatest oil reserve, is nearing the completion of its drilling development. Due to compilation of unusually complete engineering and geologic records on the field, much information regarding its future importance can now be determined.

The field provides an outstanding example of the benefits of strict conservation principles. Under the administration of the Arkansas Oil and Gas Commission, wide well spacing, adequate casing programs, uniform drilling and completion methods, and equitable proration were provided by means of a thorough study of the field throughout its development. These same principles of conservation, applied in fixing the critical production rate after development is completed, will assure maximum recovery over a long flowing period.

Conservative estimates now place the recoverable reserves from Magnolia at 180,000,000 bbl. of oil, 292,000,000,000 cu. ft. of gas, and 628,000,000 gal. of natural gasoline and butanes. Such a large reserve from a 100-well field whose estimated productive area is only 4,000 acres is very unusual. A thick saturated section in the porous oolitic member of the Smackover lime is responsible for the reserves in place. The high recovery figure of 60 per cent is attributable to an effective water drive, and to advanced methods of development and production under the guidance of commission engineers.

The reserve estimates have been computed on a volume basis. From present geologic knowledge of the structure, it is reasonably estimated that the field will comprise 100 wells and about 4,000 acres. A total of 73 wells and 3,000 acres are now definitely productive, and with continued activity of the 12 rigs currently drilling in the field, the development program will be completed in January or February.

Under the gas cap, the maximum oil section in the field totals 180 ft. in thickness with little variation in porosity or permeability. The lime dips steeply to the north and south, forming an elongated anticline running east and west. This steep dip accounts for the average thickness of the oil section of 125 ft. The following factors form the basis for the reserve estimates of oil and gas:

OIL

Productive area, acres	4,000
Average oil section, feet	125
Porosity, per cent	18.5
Connate water, per cent	20.0
Shrinkage, per cent	30.0
Recovery, per cent	60.0
Unsaturated section, per cent	20.0
Unit recovery, bbls./acre-foot	450
Recoverable reserves, million barrels	180

GAS

Gas cap area, acres	1,400
Average thickness, feet	65
Est. recovery at 3,300 lb., million cu. ft.	720
Est. recovery at atm. pr., billion cu. ft.	166
Gas in oil solution, cu. ft./bbl. oil	700
Casinghead gas at atm. pr., billion cu. ft.	126
Total gas recovery, billion cu. ft.	292

NATURAL GASOLINE AND BUTANES

Recovery of 26-70 product, g.p.m.	1.5
Total recoverable 26-70, million gal.	438
Recovery of C_4H_{10}, g.p.m.	.65
Total recoverable butanes, million gal.	190

Of prime importance in view of the large reserve and potential production, is the indication of future production rates at Magnolia. As illustrated in the accompanying chart, daily average production during the past several months has increased sharply. This is due to the commission's policy in setting allowables during the rapid drilling of the field. Instead of setting a top field allowable at the beginning of each month, and thereby cutting back per well allowables as additional producers were completed during that month, the commission has allowed newly completed wells a production based on the same acre-pound factor which was determined for that month's schedule, thus increasing the field's production by that amount for each new well.

That policy of allowing field production to increase with development has encouraged drilling, and has aided the producer in assuring him that his future crude commitments may be met without per-well production decline during the month.

Withdrawal Rate

The fear that Magnolia production may continue to increase after drilling has ceased, thus threatening its price structure, is wholly unfounded. Through its studies of the critical flow rate in the field, the commission has estimated that the withdrawal rate which will provide for the greatest recovery of oil per pound drop in pressure, and the lowest gas-oil ratio, may be about 20,000 bbl. daily, which figure it has already approached. This critical flow rate, which will be more definitely determined when drilling has ceased, will provide an oil-withdrawal rate as close as practical to the rate of water encroachment, thus maintaining the reservoir pressure at a maximum. The maintenance of a high reservoir pressure is a well-established factor in the production of a water-drive pool to greatest ultimate recovery.

Assuming, then, that the 20,000-bbl. daily rate is found to be the critical rate, the field will produce about seven million barrels yearly, or 4 per

cent of its reserves. With a total of 2,611,438 bbl. produced up to November 1, the field will in all probability continue on production until after 1975.

The Arkansas Oil and Gas Commission is committed to the policy of holding Magnolia production to the critical rate, regardless of market demand. At the present time operators have shown evidence that a 50,000-bbl. market for the crude is available. However, conservation and not market demand is the consideration in placing Arkansas allowables. The situation at Magnolia clearly illustrates the contention of authorities in the industry, that if crude production were prorated on the sole basis of conservation, pointing to greatest recovery, that the problem of market demand would not present itself.

Magnolia Investments

The policy of future Magnolia production rates greatly enhances the value of investments in the field. A few of the early wells have already been paid out, according to estimates, based on a $40,000 cost of drilling a well at Magnolia. At the monthly rate of 1 ft. 9 in. rise of the water table with a 20,000-bbl. daily withdrawal, even the wells on the field edges may be expected to show a profit.

In view of the increased value of royalties at Magnolia, the Arkansas Revenue Department has called a meeting in Magnolia on November 9 to study contemplated revision of royalty evaluation. While this study will include royalty investments in the state as a whole, it applies particularly to Magnolia. Since July 1, the revenue body has employed engineers to draw up decline curves on all settled production in the state, from which to help compute oil and gas reserves for the state.

The new reserves thus computed will be used in re-valuating royalty assessments for tax purposes. This state action bears out the opinion that Arkansas royalty investments, particularly in Magnolia, have appreciated in value due to the conservation methods employed in developing and producing fields in the state.

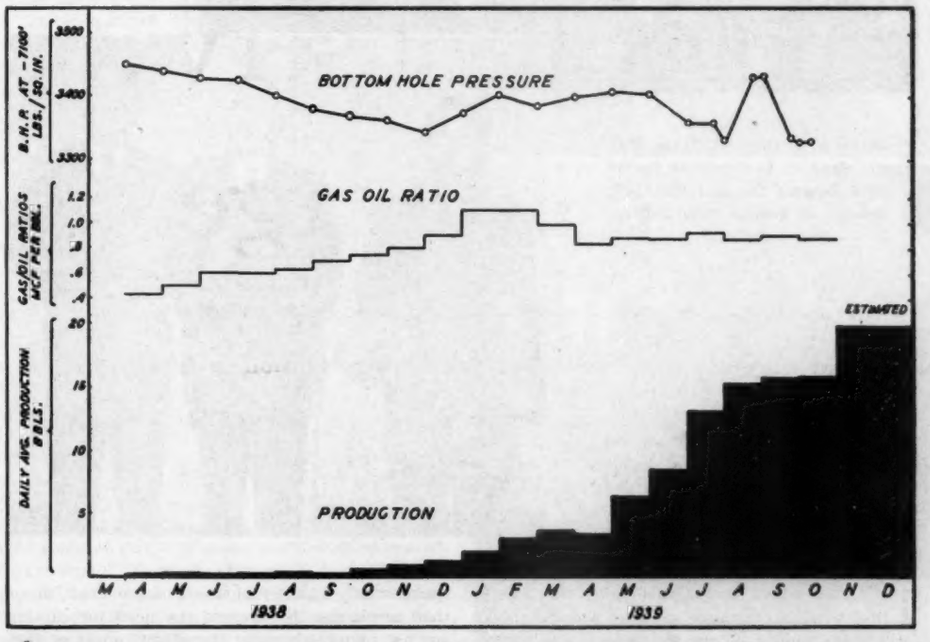
Gasoline-Plant Construction

Based on the long life expectancy of the field, the Shell Oil Co., Inc., has begun construction of a natural-gasoline plant to process casing-head gas from the oil wells. This compression-absorption-type plant will have a capacity of 20,000,000 cu. ft. daily, and its yield of 26-70 product is expected to average 35,000 gal. daily. In addition to the natural gasoline production, 13,000 gal. daily of butanes will be recovered. This latter product will be moved by specially designed tank cars to the company's refinery at Norco, La., where it will constitute polymerization charge stock.

The gas will be gathered at atmospheric pressure from the field separators, moved to the plant and boosted to 175 lb. at the main absorber. The lean gas is to be returned to the leases for use, with excess gas vented, or used for fuel if a market can be found. In addition to Magnolia wells, the plant may include casing-head gas from wells in the Village field 2 miles to the east, or the Atlanta field 4½ miles south of Magnolia. The possibility of further natural-gasoline reserves from the Dorcheat field 12 miles southwest of the plant site will be studied when that field has undergone further development.

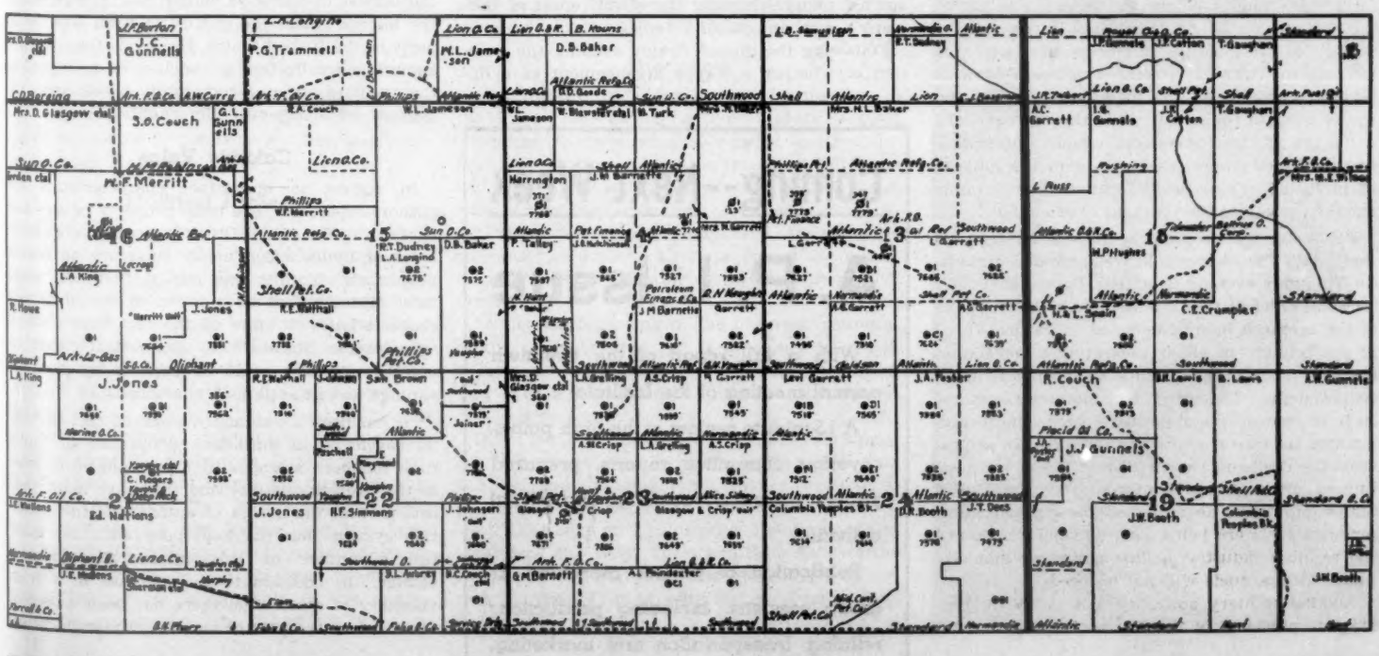
Gas production in the Magnolia field is estimated to have reached 2,187,087,000 cu. ft. on November 1. Much of this gas was used in drilling the field. Continuous recording meters now installed on all wells in the field provide for a close check on the gas-oil ratios of producing wells. Gas-oil ratios, which were shown to improve during the August shutdown, will come up for further study when the field has gone on settled production.

The effect of new wells on the average bottom-hole pressure has also clouded the true pressure-production relationship up to this time, and field tests made after development is completed will provide data for determining the critical flow rate on which the field will be permanently prorated.



Right: Production-pressure relationship at Magnolia. Pressures were influenced by continued drilling, and are not indicative of the true relationship which will be shown when the field is completely drilled. The pressure rise in August is due to the shutdown. November and December production averages of the field are contemplated at 20,000 bbl.

Below: The 75 producing wells at Magnolia outline the field generally with dry holes on the north and northeast, and special-permit locations on 20-acre units on the south edge. The field will eventually comprise 100 wells, it is estimated. The additional wells, mostly at the east and west edges, will be completed in February



Automotive Engineers Discuss Wide Range of Subjects

By W. T. ZIEGENHAIN

Above: H. L. Gray, of Oakite Products, Inc.; A. L. Heintz, of Sinclair Oil & Refining Co., and Prof. E. L. Barger, of Kansas State College

Right: J. W. Vaiden, of Skelly Oil Co.; G. C. Richardson, of Indian Territory Illuminating Oil Co., and Col. A. W. S. Herrington, of Marmon-Herrington Co., Inc.

THE role which motor fuels play in modern life, whether in peace or war, was discussed from many angles before the annual meeting of the National Fuels and Lubricants Division of the Society of Automotive Engineers at its annual meeting in Tulsa last week. Engineers of wide reputation discussed the manufacture, sale, and use of modern fuels and, while this proved to be a feature of the convention, equally interesting and vital views were presented upon the subjects of multifuel engine design, automotive cleaning, tractor fuels, and the lubrication of engines.

Following the program of papers for each of the 2 days the society held well-attended dinners. On Thursday evening Brig. Gen. Barton K. Yount, assistant chief of the U. S. Army Air Corps, spoke of the research being conducted in various fields of the country to aid in perfecting a correlation between aviation-fuel quality and airplane-engine requirements. The need for high-octane motor fuels to operate the abnormally high-compression modern airplane engines was stressed. He emphasized the desire to have available 100-octane gasoline at many points scattered over the United States. However, he indicated the present needs for such fuels are being met, and only cautioned the refining industry against assuming that still higher octane fuels will not be needed.

Another military authority, Col. A. W. S. Herrington, president of the Marmon-Herrington Co., spoke briefly of the fuel needs of war craft, other than airplanes. He stressed the need for caution against underestimating the effectiveness of Germany's mechanized land forces.

Following the dinner Friday evening the question of whether a V-type arrangement of cylinders in an internal-combustion engine is to be preferred to one in which the cylinders are kept in line was discussed in a debate between engineers from Kansas State College, who took the affirmative, and those from the University of Oklahoma, who took the negative side. The relations between cylinder arrangement and fuel requirements were made an important part of the discussion and this prompted a review of the statements made earlier in the convention by H. M. Trimble, of Phillips Petroleum Co., as part of a paper presented by the speaker, R. C. Alden and M. G. Blair, all of the same company. In it they emphasized the need to maintain a volatility of relatively high degree to effect adequate and uniform distribution of the gasoline vapors in a modern engine if maximum power and efficiency are to be derived from the engine and gasoline. As a basis for discussing the subject in its most intimate terms, the speaker compared the A.S.T.M. distillation characteristics of present-day fuels with those of 10 years ago. As may be expected, the authors drew the conclusion that present-day fuels are decidedly more volatile as expressed by the average vaporization temperatures. As a basis for comparison, they chose the annual reports of the Bureau of Mines on winter gasolines in which the bureau traces the quality of fuels sold in all parts of the United States. However, they warned against generalization of conclusions in regard to the needs of any one community based upon the average of needs over the country.

Calorific Value

In regard to motor-fuel characteristics the authors reported: "The basic property of any fuel is its calorific value. Other important characteristics of hydrocarbon motor fuels are antiknock properties, volatility and purity. In recent years most attention has been given to the antiknock characteristics in spite of the fact that there is considerable literature to demonstrate that increased volatility could be used to as great advantage as can antiknock characteristics.

"It has been a commonly observed fact that the improvement in antiknock properties of motor fuels has been attended by a pronounced increase in the overall volatility and there are many indications that the design of automotive fuel induction systems has not kept pace with nor taken full advantage of this intrinsically valuable change. In addition to the increase in average volatility of motor fuel there has been a decided tendency on the part of motor-fuel manufacturers

Coming--Next Week

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toward pronounced seasonal volatility characteristics. This development originated in the midwestern states and has now reached a high degree of perfection in this area. It is estimated that in some states as much as 40 per cent of the winter gasoline sales volume is in the category of extremely volatile fuels.

Vapor Pressure

"In discussing the volatility of motor fuels too much emphasis has been placed on vapor pressure. Vapor pressure, as a volatility characteristic, is of very limited significance. In the present discussion we are concerned with those more important volatility characteristics which are determined by the complete or almost complete vaporization of the gasoline in air-fuel mixtures. These vaporization characteristics have been mathematically related to the mid portions of the A.S.T.M. distillation curves."

In conclusion, the authors pointed out that "in general, the vaporization characteristics of modern winter gasolines are such that, except at extremely low vaporization temperatures, only moderate choking is necessary to attain operable air-vapor mixtures. A convenient method for converting A.S.T.M. distillation data to air equilibrium vaporization curves has been made available and when applied shows that, as compared with the average winter gasoline of 1919, the average winter gasoline of 1938 had greatly improved low-temperature vaporization characteristics. The average winter gasoline of 1938 was further improved in low-temperature vaporization characteristics, but was more pronouncedly improved in high-temperature vaporization characteristics. It further shows that the average 1938 winter gasoline will furnish an operable air-vapor mixture at a vaporization temperature of 0°F. if the supplied air-fuel ratio is anywhere between 1:1 and 5.4:1. In comparing the vaporization characteristics of the middle 90 per cent in volatility of last winter's gasolines at low vaporization temperatures, there is a very narrow range of supplied air-fuel ratio that will provide operable air mixtures for both extremes.

"In comparing the vaporization curves for 1938 winter fuels of relatively high and low volatility, it was established that at vaporization temperatures below 32° F. or at supplied air-fuel ratios of less than 5.2, it is impossible to make a fixed setting that will provide operable mixtures for both gasolines.

"To provide an ideal air-vapor mixture for the range of vaporization characteristics found in 1938 winter gasolines would require supplied air-fuel ratios of 1.0, 1.6, 2.9, 4.6, and 6.1 at a vaporization temperature of 10° F. for the least volatile, least volatile of middle 90 per cent, average, most volatile of middle 90 per cent and the most volatile gasolines respectively."

Multifuel Engine

Somewhat in contrast with the trend toward greater volatility in modern internal-combustion engine design, was the discussion presented by P. C. Richie, of Waukesha Motor Co., in which he pointed out the advantages and limitations of a newly developed "multifuel" engine. This, he said, was a modification of the Hesselman type, and could be found to work most satisfactorily in relatively heavy duty such as for driving trucks and heavy stationary machinery. Its economy compares most favorably with that of the diesel, even in those fields in which the diesel is most advantageously used. The new engine, he said, would burn natural gas, butane, gasoline, kerosene, tractor distillates, alcohol, producer gas or fuel oil. This could be done, he said, by making some rather simple adjustments in the engine mechanism and carburetion. The engine is a combination spark-compression ignition engine and should find its logical place in the oil fields as a source of power and on the roads for hauling.

The presentation of pictures of newly developed tractors, designed primarily for moving dirt, was also appreciated by the oil engineers in attendance as there is an increasing demand for making roads to their properties, digging mud pits on well locations, making fire walls and preparing the grounds on the lease for proper drainage. The pictures and a discussion of modern tractor characteristics were presented by J. M. Davies, research engineer, Caterpillar Tractor Co.

The subject of tractor fuels was discussed by Prof. E. L. Barger, of the agricultural engineering department of the University of Kansas. His remarks included:

"The type of tractor on American farms today in greatest numbers is capable of handling a wide range of fuels. It has a compression ratio slightly above 4. Its intake manifold is so designed that sufficient heat can be applied to vaporize the fuels of the kerosene and distillate range. Tractor engines are peculiar in that they are the only large class of engines designed for, and intended to use such a wide variety of fuels.

"In those states where agricultural gasoline is not subject to motor vehicle fuel tax, gasoline makes up a major part of the tractor fuel consumed in spite of the fact that approximately 90 per cent of the tractors on farms are capable of handling the heavier fuels. Since gasoline is used so extensively and because certain advantages are to be gained by burning the higher-grade fuels in engines designed for their use, some manufacturers are offering as optional equipment tractors with high-compression engines. They have compression ratios between 5.5 and 6.0 and require the use of the better-grade gasolines. As the situation stands, there is competition between the type of tractor engine which utilizes high-priced gasoline with high power and efficiency, but is unable to burn low-grade fuels, and the type which will burn either cheap, low-grade fuels or gasoline with relatively low power and efficiency. The tractor operator's fuel problem is much more complicated than that of any other group of engine operators. It might appear, without having given the problem sufficient thought, that there is no justification for the existence of this complex condition. One might take the attitude that all tractors should be high-compression and thus follow the trend of car, truck, and airplane engines. I believe a study of the facts will show the fallacy of this attitude."

Lubricants

Limiting the discussion during this meeting to the subject of lubricating hypoid gears, a most comprehensive and conclusive paper was read by Dr. C. F. Prutton, consultant for Lubri-Zol Corp., and with A. O. Willey as coauthor on the chemistry of hypoid gear and oils. He concluded:

"Present-day hypoid lubricants function by chemical reaction which produces a minute amount of solid lubricant at points of excessive pressure.

"A careful balancing of the chemical activities of the reagents employed is necessary to obtain a lubricant composition which will be satisfactory over a wide range of operating conditions, and long periods of service.

Other subjects of interest to the engineers present, but which dealt with problems other than the fuel and lubrications of engines, were those presented by H. Liggett Gray, of Oakite Products, Inc., who spoke on "Automotive Maintenance and Cleaning," and W. T. Tiffin and Ottie Eads, of the University of Oklahoma, who presented a discussion of "Metal Cutting With Butane, Propane and Acetylene."

Top: W. T. Tiffin and Ottie Eads, of the University of Oklahoma, and P. C. Richie, of Waukesha Motor Co.

Center: H. M. Trimble and M. G. Blair, of Phillips Petroleum Co., and J. O. Eisinger, of the research department of the Standard Oil Co. (Indiana)

Bottom: A. J. Blackwood, of Standard Development Co., and C. B. Veal, research engineer for the S.A.E.

TEXAS

POSSIBILITY OF TEXAS OBTAINING an increased production allocation during November to take care of increased export demand for Texas oil was reported as unlikely by Railroad Commissioner Jerry Sadler. Mr. Sadler and Chairman Lon Smith were in Washington in an attempt to get the Bureau of Mines to revise upward its November estimated demand figure for Texas oil. The bureau estimate for Texas during November is 1,444,000 bbl. daily, but these commission officials contended an additional 373,000 bbl. was justified as that amount of crude is moving daily into export. After their conference with Secretary Harold L. Ickes and John W. Finch, director of the Bureau of Mines, they reported they had not received much encouragement for an increase in the November figure but that the next bureau estimate would probably set the state figure higher.

Mr. Sadler described the crude-shortage condition in Texas due to the higher war demand as "acute." There was so much crude being sent from Texas to be refined elsewhere that Texas refiners were having difficulty in obtaining enough oil to run their refineries, he said, resulting in some refineries closing and the possibility of others shutting down.

After their conference with the Bureau of Mines, Commissioner Sadler discussed gasoline stocks and transportation difficulties, arising when the new neutrality bill becomes effective, with President Roosevelt. Mr. Sadler said the cash-and-carry provision of the bill and its other features will force American tankers out of the war trade, possibly resulting in a shortage of transportation facilities.

The Railroad Commission at the week end set the statewide proration hearing for obtaining data for fixing the December allowable on November 17, 3 days in advance of the date originally planned.

CONTINUED REQUESTS for increased allowables, meanwhile, are causing difficulty for the commission to keep November allowables below the Bureau of Mines' figure. As of November 1 the commission set the allowable at approximately 1,396,225 bbl. daily, 47,775 bbl. under the bureau figure, but with the new order only about 1 week old requests have been heard for approximately 50,000 bbl. more of oil daily. In addition to requests heard last week and the first 2 days of this week the following additional hearings were also scheduled: November 9, Blanchard field, Duval County; November 10, Amelia field of Jefferson County, Sour Lake field of Hardin County and the Burns field of Clay County; November 13, Raccoon Bend, Webster, Clear Lake, Sugarland, and Livingston fields; November 14, Adami, South Government Wells, and Hords Creek; November 15, the Old World field of Crockett County and the Pois and Schultz field of Wilbarger County.

Largest requested increase heard last week was from operators in the Talco field of eastern Texas, who asked for a boost of at least 130,000 bbl. monthly. Talco Asphalt & Refining Co. was joined by several operators in requesting the increase, which could be achieved by either raising the per-well allowables from 54 to 64 bbl. daily for the 704 wells or by exempting the field from 4 of the 11 production holidays provided in the November schedule. J. K. McKinnon described the company's need for additional oil as urgent, stating refinable stocks were now only 10,000 bbl. whereas the plant required a 60-day supply for efficient operation.

TRIPLING OF THE HENDERSON field allowable was sought by operators in that Winkler County field at a similar hearing, in which W. K. Royalty Co. was joined by Atlantic Refining Co. and Skelly Oil Co. They sought an increase from the basic allowable of about 25 bbl. to a schedule of 75 bbl., which would give an average per-well production of around 47 bbl. with the 11 shutdown days. The basic allowable for the 136 wells was 3,425 bbl. at the first of the month. Atlantic agreed to take any or all of the increase not desired by Stanolind Crude Oil Purchasing Co., purchaser in the field. Stanolind did not want the proposed increase, but interposed no objection if Atlantic had another source of disposal for the crude.

Exception from the shutdowns was sought by operators in the Luling field of Caldwell County because of water conditions in which loss of wells is threatened if they are closed. Some 400 wells of Magnolia Petroleum Co. average 94 per cent water and 6 per cent oil, it was testified, and water conditions are aggravated by shutdowns which in some instances have caused the loss of wells. Representatives of other companies owning production in the 17-year-old field also joined in the request.

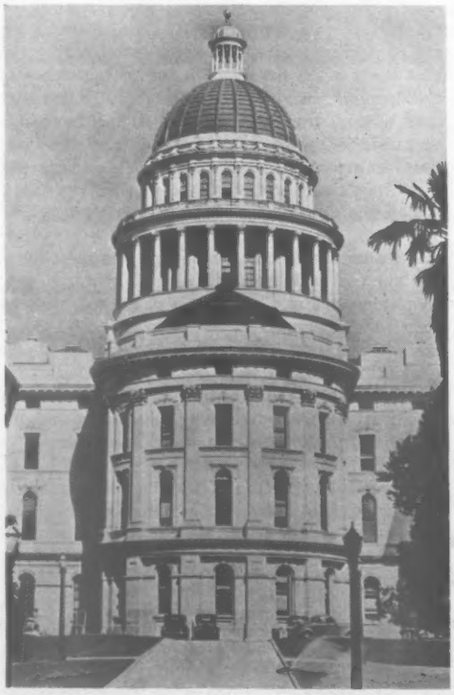
INCREASED ALLOWABLE for the Tomoconnor field in Refugio County to supply demand of a refiner, which exports large amounts of aviation gasoline and diesel fuel to England and France was sought in a hearing of the Railroad Commission on November 3.

Taylor Refining Co., which has a 20,000-bbl. plant at Corpus Christi, made the application, which Humble Oil & Refining Co. supported in the hearing. The refining company asserted Humble had filed nominations for 15,600 bbl. daily, but the quota was restricted by the commission to 10,000 bbl. daily.

STATE CAPITALS

KANSAS

THE KANSAS CORPORATION COMMISSION suggested a new method for allocation of demand for Kansas crude oil Saturday, including a 15-bbl. base allowable for all prorated wells, and asked 1,200 operators to consider its "possibilities . . . in the event any court or the commission determines that the present plan can no longer be used."



California State Capitol, Sacramento — California's referendum on the Atkinson oil-conservation law competed in interest among the voters with the "Ham and Eggs" proposal of "$30 every Thursday"

First: All wells in minimum pools shall be allocated daily an amount equal to their ability to produce daily.

Second: Each minimum well in any prorated pool shall be allocated daily the amount which it is able to produce.

Third: Every other well in prorated pools shall be allocated 15 bbl. per well per day.

Fourth: The aggregate of the allocations under first, second, and third above shall be deducted from the daily market demand as determined by the commission. The remainder of the daily market demand so calculated shall be allocated to the wells having a productivity of more than 15 bbl. per day in the direct proportion (percentage) which it bears to the remaining aggregate productivity of all wells having the ability to produce more than 15 bbl. per day after deducting 15 bbl. per well per day previously allocated in third.

Productivity as used in fourth shall be determined in accordance with the rules of the commission, giving due consideration to the acreage properly attributable to each well.

This method recognizes the relation of the daily productive capacity of all prorated wells and pools in the state.

	Daily market demand (bbl.)	Calculated state productivity (bbl.)
As determined by commission	170,600	4,541,908
First: Deduct productivity of minimum pools	43,253	43,253
	127,347	4,498,655
Second: Deduct 10 bbl. per well for 2,691 minimum wells in prorated pools	26,910	26,910
	100,437	4,471,745
Third: Deduct 15 bbl. per well for 2,720 prorated wells in prorated pools	40,800	40,800
Fourth: Remainder and their relationship	59,637	4,430,945

A divided by $P = 1.34592$ per cent

Formula to determine allowable for any prorated well:

$$A = 15 \text{ bbl.} + [(P - 15) \times 1.3 \text{ per cent}]$$

A = allowable for any prorated well
P = productivity

T. A. MORGAN, director of the commission's Conservation Division, stressed in his accompanying letter:

"It must be understood and I wish to emphasize that this method has not been adopted by the commission nor is anyone particularly advocating its adoption.

"It is merely a method which has been suggested, the reasonableness and possibilities of which are being considered in order that there may be immediately available a method of allocating the market demand in the event any court or the commission determines that the present plan can no longer be used."

Present proration rules have been challenged in state and federal courts in suits still pending, and enforcement of rules in several pools has been barred by injunction.

MICHIGAN

MICHIGAN CONSERVATION OFFICIALS are apprehensive about the state's oil future. P. J. Hoffmaster, supervisor of wells, predicts a definite shortage is facing refineries within 6 months unless development widens in producing fields, or new fields are discovered. Every field in the state is past its peak with the exception of the Walker pool in Kent County, he said.

F. R. Frye, state petroleum engineer, pointed to declining surplus figures in the Central Michigan basin area and the southwestern part of the state. He predicted that refiners may be forced to switch contracts with outside buyers, or more oil will be shipped into Michigan.

The attitude of Messrs. Hoffmaster and Frye was expressed following spiritless bidding on 20,000 acres of state land last Friday. Only 9,000 acres of leases were disposed of at the sale, bringing the state only $1,900 in revenue.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Overestimating War

The war has now been under way a sufficient length of time so that it is possible to analyze its significance to the oil industry in the immediate future.

The slowness with which new orders have been placed indicates the Allies have sufficient oil on hand that they are not faced with any shortage at this time.

Reliable reports from the warring countries imply that the war, so far, has not resulted in any substantial increase in oil consumption. The French Army, which still is not completely mobilized, is using more gasoline than it did before the war, and, to a smaller extent, this applies also to the British Army where mobilization is slowly getting under way.

The French and British navies are using larger quantities of the heavy oils, although their operations are a long way from a full-scale basis.

So far, a severe rationing of civilian consumption has largely tended to offset any increase in war uses.

It must also be remembered that the restriction of consumption is not confined to the warring nations. Rationing in some of the neutral countries in Europe is equally severe. All Europe practically is under the shadow of possible participation in the war and is attempting to conserve its oil supply.

In this connection the curtailment of normal shipping, which applies to trade in all parts of the world, has greatly reduced consumption of fuel oil in recent weeks.

For example the superliners, Normandie and Queen Mary, each of which consumes 80,000 bbl. of fuel oil in round trips from Europe to the United States, have been laid up in New York since the start of the war.

Germany's import business furnished largely by the oil countries of the Western Hemisphere and amounting to approximately 100,000 bbl. daily has been lost. This situation later may bring about important changes in the movement of exportable oil from Rumania and other countries in that part of the world. Right now, however, these former imports have to be subtracted from the total world demand.

In this country this situation has not been fully appreciated. It has been assumed by many that the increased demand for certain products, particularly heavy oils, was a reflection of the war. Actually this was brought about by improved business conditions which began last summer, and it has not been influenced by war developments in any substantial way.

It now appears certain that this condition will not change, at least until after the first of the year.

In regard to shipments major changes will have to be made in the movement of petroleum under the new neutrality law. Those in position to know say that these adjustments can be made to conform with the cash-and-carry and restricted American shipping provisions of the act and take care of the European demand for oil. It may require weeks to bring about this transition.

In the meantime, the industry in this country should base its operations on the assumption that export movement to Europe will not increase in the near future. There is no clear indication what war demands will be in 1940.

Anyone who has followed closely the war developments thus far knows that major shifts in the present war front on both sides, and the participation of others, are practically assured if the conflict continues. These are certain to have importance in the matter of oil requirements and also in the sources of supply.

The industry will be much better off if it will not attempt to anticipate these requirements, which the most astute analysts can not foresee, and be satisfied not to run the risk of overestimation from which the entire industry will suffer.

Challenge Waste Theory of Cole Bill At Opening Committee Hearings

WASHINGTON, D. C., Nov. 7.—An attack upon the waste theory of the Cole oil-conservation bill (H.R. 7372) and intimation that the situation calls for general legislation, especially as to marketing of products, featured the hearings Monday before the Cole subcommittee of the House interstate commerce committee.

Criticism of the conservation theory of the bill arose from both the Democratic as well as the Republican side of the committee, incident to presentation of data by experts for the Interior Department.

The line of questioning of spokesmen for the Geological Survey and the Bureau of Mines by committee members, aside from Chairman Cole, indicated a distinct attitude challenging the need for government intervention aside from regulation by oil-producing states.

The government witnesses were interrogated as to (1) extent of waste, if any, presently existing; (2) extent to which federal legislation would supplant state regulation; (3) amount of proven oil reserves now as compared with 5 years ago; and (4) whether or not the real intention was to stabilize price rather than conserve the supply of oil.

Members participating actively in the examination of witnesses included Chairman Cole and Representatives Wolverton, Republican, New Jersey; Mapes, Republican, Michigan; and Pearson, Democrat, Tennessee. Representative Mapes intimated the need for more far-reaching legislation than that touching upon conservation alone in questioning Alfred G. White, chief economist, Petroleum Economics Division, Bureau of Mines. All, except Chairman Cole, pursued the point as to whether there was a real need for federal legislation of this sort in the first instance.

Witnesses who testified Monday in addition to Mr. White were David Hudson, assistant solicitor of the department, and Hugh D. Miser, geologist in charge of fuels, Geological Survey. Mr. Hudson summarized the bill and explained its provisions. He told the committee he was uninformed as to the policy underlying the legislative proposal and that, so far as he knew, there was no waste in the industry. Committee members queried him as to the part his chief, Nathan R. Margold, department solicitor, had in writing the bill. Mr. Hudson said Mr. Margold reviewed the bill after it was written.

Mr. Miser was questioned as to proven oil reserves and said present estimates range from 14,000,000,000 to 17,500,000,000 bbl. He admitted the figure was "anybody's guess." The estimates, Mr. Miser said, compared with 13,360,000,000 bbl. estimated by the department in 1934.

Total demand for all oils is now at an all-time high, Mr. White testified. He admitted under questioning that there could be no conservation without affecting price, but distinguished between economic waste and physical waste in discussing this angle.

Mr. White, whose office prepares the monthly demand forecast of the Bureau of Mines, estimated total demand for all oils for 1939 as probably approximating 1,415,000,000 bbl., an increase of about 380 million barrels, or 37 per cent, as compared with such demand in 1934. The major part of this increase, he said, has been in demand for oils of domestic origin. Total imports have shown only a minor increase since 1934, he added. Probable increase in demand for petroleum products due to the war was placed at "about 10 per cent" by Mr. White, who decried current estimates of as much as a 25 per cent increase as needing to be treated very conservatively. Mr. White pointed out that war purchases were subject to exchange restrictions, transportation problems, etc., and that strict rationing of gasoline in countries at war would reduce consumption considerably.

Much curiosity was evinced by Representatives Mapes and Wolverton as to the price implications of conservation during Mr. White's testimony. The August 1939 shutdown was mentioned by committee members repeatedly as indicative of the price element of proration.

Mr. Mapes asked Mr. White: "Should the administrator (to be set up under the Cole bill) be given authority to correct unfair trade practices in the marketing of petroleum products?" Mr. Mapes, who attended the oil hearings before the Temporary National Economic Committee, also mentioned the complaints registered by independent jobbers, independent refiners, and the agitation for pipe-line divorcement. "Aren't they the major complaints about this industry, rather than waste?" he asked the witness.

First Period of Mississippi Sound Exploration Unproductive

Phillips Petroleum Co. submitted its first report to the Mississippi Mineral Lease Commission on November 2, covering exploratory work on one-quarter of the state's gulf waters. The seismograph reflection work revealed no indication of structures potentially productive of oil, gas or other minerals.

Under an agreement with the state, Phillips is conducting a 2-year exploratory program in and around Mississippi Sound. A $61,200 bonus gives the company the right to lease any areas believed productive, with a stipulation that drilling must begin within 60 days on each structure outlined and leased. As a result of the first 6 months of exploration, the company turned back all of the first one-quarter of the 720,000 acres involved.

The geophysical work has begun on the next 6 months' period, moving from west of Gulfport to the east. The next report will be due in May.

Carter Thrift Plan

Employes of Carter Oil Co., and Oklahoma Pipe Line Co. are to receive their share of approximately $2,250,000 the company and affiliates are making as an additional contribution to increase the balances which employes have to their credit in the annuity and thrift plan. Every employe participating will receive a credit of $25 and those not participating who have one or more years of service will receive a credit of a like amount. The remainder will be distributed on a proportional basis to employes in the thrift plan.

DEATHS

FRED C. McDANIEL, chief clerk in the land department for the Gulf Oil Corp. at Houston, Tex., died November 4.

JOHN H. WINEMILLER, 58, president of William Penn Oil Co., died in Tulsa November 4. A native of New Freedom, Pa., he removed to Tulsa in 1905 from Baltimore, Md.

E. J. DUNIGAN, Breckenridge, Tex., oil-well tool and supply man, died November 2 of a heart attack. He is survived by four sons, E. J. Dunigan, Jr., Pampa; James B. Dunigan, Fort Worth; F. A. Dunigan, Breckenridge, and Florence Dunigan, of Dallas, all interested in the company.

MURRAY M. DOAN, 71, died November 4 at his home in Tulsa following a lengthy illness. He formerly headed the Gulf Pipe Line Co. in Tulsa; was one time general manager of Phillips Petroleum Co.; director of Amerada Petroleum Corp., and Sunray Oil Co. He removed from Marietta, Ohio, to Texas in 1900. He profited from the Spindletop area investment near Beaumont, and worked as a scout for Sun Oil Co. He studied production methods in the Humble field and elsewhere in Texas before he joined Gulf Pipe Line Co., moving to Tulsa in 1912. He was transferred to Pittsburgh, Pa., for a time as general manager of the Gulf concern, but returned to Tulsa to become general manager of Phillips Petroleum Co. After the war he began to operate by himself.

E. L. Shea Resigns as Tide Water Associated Vice President

NEW YORK.—William F. Humphrey, president of Tide Water Associated Oil Co., announced that Edward L. Shea, executive vice president, tendered his resignation effective November 1. The board of directors tendered Mr. Shea their best wishes. After 23 years of service with Tide Water Associated Mr. Shea becomes president of the North American Co. He will continue as a director of Tide Water Associated. The office of executive vice president has been abolished.

Standard of Ohio Denies Price-Fixing Charge

WASHINGTON, D. C.—Emphatic denial that Standard Oil Co. of Ohio ever conspired to fix gasoline prices in that state was filed with the T.N.E.C. by A. A. Stambaugh, vice president, denying earlier testimony by George B. Ingram, Canton, Ohio, gasoline dealer.

Depletion Law Clarified

WASHINGTON, D. C., Nov. 6.—The Supreme Court today prescribed a uniform method of computing oil and gas depletion for purposes of federal-income-tax allowance in deciding a group of related cases involving Wilshire Oil Co. and F. H. E. Oil Co. in which circuit courts had rendered conflicting decisions. The revenue laws permit a depletion deduction of 27½ per cent of gross income but not more than 50 per cent net income, and the court held that development expense must be deducted from gross income in figuring depletion, if development cost is treated as ordinary expense in computing net income.

Gulf Coast Stocks

HOUSTON, Tex., Nov. 7.—Unsold stocks as reported by Gulf Coast Refiners Association in comparison with the preceding week represented an increase of 14,078 bbl. in aviation gasoline; decrease of 213,414 bbl. in motor fuel; decrease of 9,751 bbl. in naphtha; increase of 12,000 bbl. in kerosene, and decrease of 7,930 bbl. in Bunker C fuel.

THE MARKETS*

CRUDE OIL: A 10-cent advance in Corning, Ohio, crude and a 3-cent increase in West Branch, Michigan, crude were posted in the past week. Sun Oil Co. changed the classification of several Gulf Coast crudes, which gave each of them a 5-cent increase on all grades. Michigan conservation authorities fear Michigan production will not meet Michigan refinery demand long unless drilling in the flush fields is increased or new pools are brought in. Illinois production fell off over 12,000 bbl. per day from the previous week's figures.

REFINERY: Gasoline lacks steadiness as stocks climb and export business fails to get under way. Heating oils gathering strength as colder weather arrives. Oversea demand for wax is outstripping supply. Lubricating oils firm. Natural gasoline losing buoyancy. Heavy industrial oil active.

TANK WAGON AND POSTED DEALER: Only minor changes, at scattered points, to effect local adjustments.

FINANCIAL: Oil issues, affected by nervousness which pervaded the entire market, drift to lower levels. Average of 30 representative stocks for week ending November 4: High, 29.05; low, 27.07; close, 28.60. Week ending October 28: High, 29.44; low, 28.37; close, 28.81.

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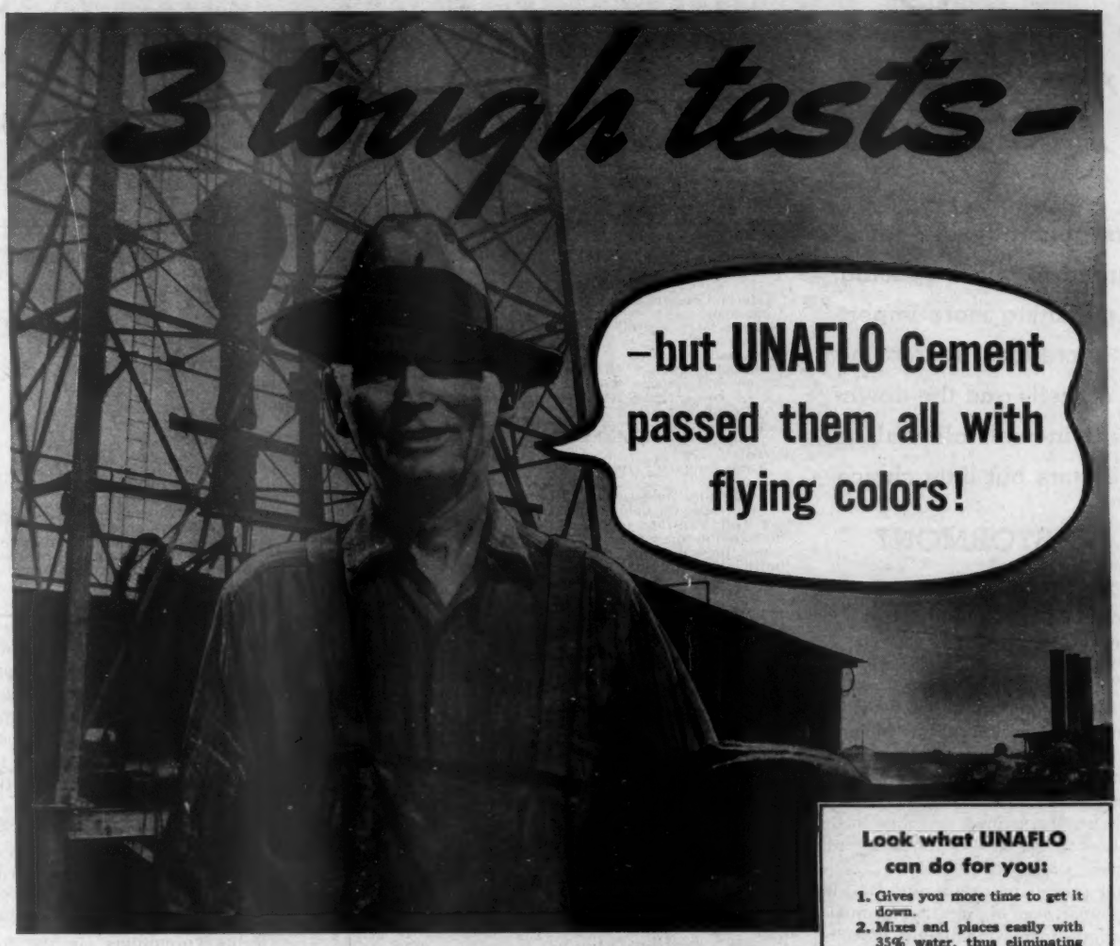
*Detailed information in market section.



1. In Southern Louisiana, a 16-lb. Unaflo slurry was pumped down for one hour and 50 minutes under a temperature of 190° and a pressure of 10,000 lb. per sq. in. Then circulation was reversed and the excess cement was washed through a 3½-inch drill pipe and flowed away to the circulating pits as a fluid slurry!

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3. 1,500 bags of Unaflo were mixed 15.8 lb. per gallon in 35 minutes. Cement was pumped down 11,342 ft. where bottom-hole temperature was 236°. Pump-down time—18 minutes, 15 seconds. Plug was landed with maximum pump pressure of 1400 lb. per sq. in. No ice was used. And cement drilled from plug was hard and dense!

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CEMENTS

Acreage Given More Weight in Texas Proration Methods

Operators generally are favoring the trend to wider spacing, and are attaching more importance to acreage. Increasing numbers of wells and the downward trend in well allowables leave operators but little choice

By D. H. STORMONT

FORT WORTH, Tex., Nov. 6.—New field rules issued by the Railroad Commission of Texas this year place a greater emphasic on acreage in that it occupies a more important role in allocation formulas, and also that the field rules specify larger proration units. Other significant developments in new field rules are the wider well spacing generally provided; adoption of spacing patterns that allow for closer spacing of wells if future developments should prove the desirability of such action; and, to the extent that acreage gained, a decline in the percentage of oil controlled by potential factors in proration formulas.

Chief reason for greater proration units and increased emphasis on acreage in proration formulas, no doubt, is to curb the increasing number of wells. In recent years the number of producers has shown a steady increase, resulting in new production far in excess of the gain in market demand; so that, as a result, the per-well production has decreased. To illustrate, in 1933, the daily average production per well in Texas was 24.0 bbl.; in 1935 it had declined to 19.3 bbl.; in 1938 to 16.0 bbl.; and for 1939 is estimated to be about 15.2 bbl.

During this 6-year period the number of wells increased from 48,100 to over 89,200 as of October 1, but Texas production had increased from a daily average of 1,103,000 bbl. in 1933 to only about 1,350,000 bbl. for the first 9 months of the current year. Thus, by promulgating field rules that will reduce the number of wells that have to be drilled at this time, the downward trend in allowables will be curbed, at least to some extent.

The generally greater depths that holes must be carried, with the attendant higher cost of drilling, and the increased time for payout caused by lower allowables, also influence the trend toward larger proration units and wider well spacing. Figures show that prior to 1929 only about 11 per cent of Texas fields were developed on spacing patterns of 20 to 40 acres; during the period between 1929 and 1939 less than 46 per cent of the fields were drilled on this basis; but so far this year about 90 per cent of the new field rules called for 20 to 40-acre spacing patterns. Thus, it is evident both the commission and operators are exhibiting more interest in keeping unnecessary drilling at a minimum. This is being accomplished largely through withdrawal of the incentive for excessive drilling by offering "premiums" in the form of higher acreage allowables for adoption of larger proration units.

TABLE 1—PRORATION UNITS AND SPACING PATTERNS USED IN NEW FIELD RULES

	District					
	2	3	4	7	8	9
Proration units:						
10-acre	0	0	0	2	2	
20-acre	3	4	9	0	5	5
20-40-acre	1	0	0	0	1	0
40-acre	0	1	1	3	0	3
Spacing patterns:						
300-600	0	0	0	1	0	0
330-660	2	1	4	1	5	5
330-770	0	0	0	0	1	0
330-796	0	0	0	0	1	0
330-933	0	1	2	0	0	0
440-880	0	0	0	0	1	0
466-850	1	0	0	0	0	0
466-933	2	3	3	2	0	3
660-1,320	1	0	*1	1	1	1

*The Rincon field of Starr County has field rules providing for 330-660-ft. well spacing in a north-south direction and 660-1,320 ft. in an east-west direction.

TABLE 2—SUMMARY OF PRORATION METHODS IN USE IN TEXAS FIELDS

Method of proration—	District										Ttl. Jan. 1	
	1	2	3	4	5	6	7	7C	8	9	10	Ttl. 1939
Submarginal	18	9	..	33	..	..		..	8			58	58
Marginal + potential	..	..	4				14	3	30	9	5	65	66
Per well	34	24	77	55	16	15	..	10	21	2	..	254	251
Acreage unit	..	10	3	6	..	..	..	..	..	1	..	20	12
50 per cent acreage + 50 per cent per well	..	2	8	13	3	..	7	..	3	10	..	46	26
50 per cent acreage + 50 per cent potential*	..	2	15	4	..	1	1	..	12	..	..	35	29
25 per cent acreage + 75 per cent potential*	..	..	..	1	..	..	..	..	1	..	..	2	1
75 per cent acreage + 25 per cent potential*	..	..	..	1	..	..	..	..	2	1	..	4	0
Other methods†	..	1	..	..	1	2	..	..	1	..	..	5	3
Total	52	48	107	103	20	18	22	13	78	23	5	489	446
Total January 1, 1939	52	43	102	94	20	18	17	13	68	14	5	...	446

*Includes fields prorated on individual well potentials and average unit potentials.
†Includes Cordele field of Jackson County, which is prorated on basis of 75 per cent to acreage and 25 per cent per well; Van field (deep) of Van Zandt County, prorated on basis of productive acre-feet adjusted 100 per cent for bottom-hole pressure; the East Texas field, prorated on basis of marginal plus ratio of the unit acre-feet of saturated sand, times potential, times bottom-hole pressure to the field as a whole; Rodessa field, prorated 50 per cent to bottom-hole pressure plus 50 per cent to acreage; and Howard-Glasscock, which is prorated on basis of marginal plus potential plus acreage.

Spacing Patterns and Proration Units

In Table 1 are shown spacing patterns and proration units adopted in new field rules issued during the first 9½ months of this year. In Table 2, which is based on a similar table prepared by the Railroad Commission at the first of this year, is shown a breakdown of proration methods (by districts) used in Texas fields as of October 15. Study of these tables readily shows that acreage assumed greater importance in proration methods and that field rules called for wider well spacing. The "straight acreage" method of proration, "50 per cent acreage plus 50 per cent per well" and "50 per cent acreage plus 50 per cent potential" are the formulas most adopted in 1939 field rules. Of the 43 fields for which new orders were issued, including amendments to three fields, 20 were on an acreage and per-well basis, 8 on straight acreage, and 11 on an acreage and potential basis, with the acreage factor controlling 50 per cent or over of the allowable in 10 of the 11 fields.

Further study reveals that 10-acre proration units were adopted in only four fields, while 20-acre units were set in 26 fields. Two fields are being developed with units over 20 acres but less than 40 acres, and 40-acre tracts were adopted in eight new fields. Spacing patterns used in these new fields are shown in Table 1, which reveals that a great majority call for 330 ft. from property lines and 660 ft. between wells or the 466-933-ft. spacing pattern. In five fields 660-1,320-ft. well spacing

(Continued on Page 84)

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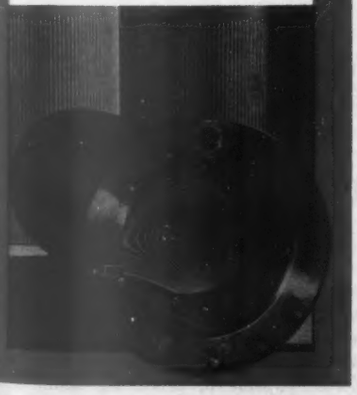

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Mexico . .

Dominant Party For a Definite Nationalization

MEXICO'S seizure of oil properties was injected into the nation's political picture last week when the Revolutionary party, the dominant group, declared itself for total and definite nationalization. The party met in Mexico City to designate its candidate for next year's presidential election. Gen. Manuel Avila Camacho was selected to lead the party's ticket.

The declaration of the party's policy respecting the petroleum industry was contained in the first four paragraphs of a committee report on a 6-year plan. The articles read as follows:

"1. The petroleum industry will be totally and definitely nationalized.

"2. In the event that it should be absolutely indispensable to compensate the concessionaires as a result of nationalization, it will be laid down in laws that the compensation must in no case be greater than the unrecovered part of the justified investment.

"3. The stand will be invariably assumed that no proposals will be considered, or any solution accepted, that will lead either directly or indirectly to the result of returning their goods to the expropriated companies, or of permitting their intervention in the management of the petroleum industry on national territory.

"4. A percentage of the proceeds from sales of petroleum will continue to be set aside to constitute a fund for indemnification of the expropriated companies."

The European war has cut oil exports from Mexico almost to half. In the first 2 months of hostilities Mexico exported 2,334,000 bbl. against 4,600,000 bbl. in the last 2 months before the war's outbreak. Of 1,267,000 bbl. exported by Mexico in October, 736,000 bbl., or 58 per cent, came to the United States.

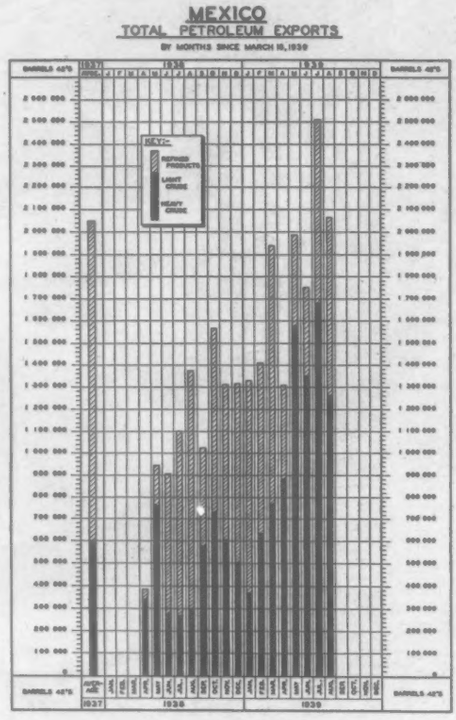
One of the most significant changes in the Mexican petroleum industry since expropriation is an almost complete reversal in the character of exports. During 1937, the last complete year of normal private operation, nearly 71 per cent of all exports consisted of refined products and crude oil amounted to a little more than 29 per cent.

Since March 18, 1938, 53.2 per cent of all Mexican petroleum exports has been crude and only 46.8 per cent refined products. For eight months of this year 59.9 per cent of the exports has been crude and only 40.1 per cent refined products. In May, June, July, and August alone the ratio was 70.3 crude and 29.6 per cent refined products, indicating that the refining branch is gradually yielding to the lack of markets and to the absence of skilled operators and adequate replacements.

The cracking plants at Minatitlan, formerly owned by Compania Mexicana de Petroleo (Aguila), and at Tampico, formerly Huasteca Petroleum Co. property, are reported shut down awaiting needed equipment.

Numerous fires and accidents have occurred recently in most of the operating refineries due to exhaustion of tubes in heaters and exchangers. The Minatitlan plant has been the most seriously damaged, according to available information. New trays and caps for the dephlegmator were delivered in Mexico several months ago, but the cracking plant has been unable to operate because of the condition of the lining of the hot-oil pump.

In searching for new markets to replace those lost because of the European war "Distribuidora de Petroleos Mexicanos" has opened a sales office in New York. This government company handles



all sales of national oil and will serve as a purchasing agency for equipment formerly supplied by Germany in exchange for petroleum.

Egypt . .

Production of Crude Continues to Climb

THE steady climb of Egyptian crude oil production continued in July when output of 445,747 bbl. was reported for the country, a daily average of 14,379 bbl. For the same 1938 month production was 87,780 bbl., or 2,832 bbl. daily.

The new Ras Gharib field which was brought into production in August 1938 by Anglo-Egyptian Oilfields, Ltd., is entirely responsible for the spectacular increase in Egyptian production. In the year which has elapsed since the Ras Gharib field was discovered Anglo-Egyptian has drilled more than a dozen producing wells and the productive limits of the field have not been established, according to general information here.

Accumulative production for the first 7 months of 1939 amounts to 2,534,472 bbl. compared to 659,998 bbl. for the same period in 1938. A steady increase in production started in August 1938, when output jumped from 87,780 bbl. in July to 150,450 bbl. and continued upward reaching a peak for last year of 223,426 bbl. in December. The upward movement of Egyptian production has continued this year starting with 308,946 bbl in January to the record fixed in July.

Russia . .

Black Sea Exports Decline in August

A PRECIPITOUS drop of 60 per cent was reported in Soviet petroleum exports through Black Sea ports during August. All Black Sea exports pass through Istanbul, Turkey, where cargoes are declared. Whether the sharp decline in August is directly related to the Soviet occupation of Poland and possible diversion of shipments to the north coast for German destinations is a matter of conjecture.

During August petroleum exports through Black Sea ports totaled only 40,926 metric tons, or in the neighborhood of 300,000 bbl. Gasoline made up a bulk of the shipments and amounted to 19,553 tons during the month. Fuel-oil exports totaled 17,178 tons; kerosene, 2,095 tons, and benzol 2,100 tons. In August 1938 Black Sea exports of petroleum totaled 100,295 tons.

For the first 8 months of this year Russia exported 471,643 metric tons of products through Black Sea ports, compared to 494,506 tons from the same sources in the similar 1938 period. Declared exports to Germany during August totaled only 4,708 tons, but there is an additional item of 13,349 tons, mostly fuel oil, reported by the U. S. commercial attache's office in Moscow designated simply "for order" which indicates the actual destination was concealed for some reason.

England received 12,994 tons of products, 70 per cent being gasoline, and Siberia was the destination of 9,875 tons during the month. Russian Black Sea petroleum exports during the first 8 months of this year and 1938 are shown in the following table by products (figures in metric tons):

	First 8 months	
Products—	1939	1938
Lubricating oil	41,392	73,506
Fuel oils	262,319	240,606
Kerosene	30,074	22,345
Gasoline	130,441	158,049
Benzol	7,417	.....
Total	471,643	494,506

Normal conversion factors are: Lubricating oil, 7 U. S. bbl. per ton; fuel oils, 6.66 U. S. bbl. per ton; kerosene, 7.75 U. S. bbl. per ton; and gasoline, 8.5 U. S. bbl. per ton.

Argentina . .

Report of 5,000-Bbl. Well in Tupungato

COMPLETION of Argentina's largest oil producer was reported in a cable last week to the New York Journal of Commerce. The well was reported capable of producing about 5,000 bbl. per day from a depth of 6,700 ft. The well is in the Tupungato region of Mendoza and was drilled by Y.P.F., the government company.

The Andean province of Mendoza has received considerable drilling activity this year. During the first 9 months Mendoza production totaled 455,119 bbl. compared to 92,500 bbl. for the same time in 1938.

A refinery is under construction at Mendoza and will become available for operation early next year.

EUROPE SPENDING $100,000,000 FOR REFINERY CONSTRUCTION

Oil fields at Borysław, Poland, now in possession of U.S.S.R., whence Russia will get the crude to feed the new refineries now under construction

By H. STANLEY NORMAN

NEW YORK, Nov. 6.—Foreign refinery facilities under construction or contract, representing an outlay of more than $100,000,000, are being pushed to completion with all speed. A large part of the construction in the hands of American engineering firms will become available for service before the end of this year, or during the first quarter of 1940. Private and government interests involved in foreign refinery construction are exerting pressure on the engineering firms to speed up the program.

All channels of detailed information on capacity, location and type of refining units under construction in foreign countries, particularly in Europe and adjacent territory, have been closed. The American engineering firms have been warned repeatedly and in detail against dissemination of any information whatsoever that might be advantageous to enemies.

A large percentage of the refinery construction work in Europe was started prior to declaration of war, however, and information has been made available on pre-war construction contracts in one form or another. A catalytic cracking unit and two alkylation plants were on the pre-war construction program in France; a complete refinery was more than 50 per cent completed at Haifi, the Iraq pipe-line terminal at the eastern end of the Mediterranean; catalytic reforming and alkylation units are under construction at Anglo-Iranian Oil Co., Ltd.'s refinery at Abadan, on the Persian Gulf, and similar equipment is being installed at two refineries in Great Britain.

The current expansion of refining facilities in South America and the Netherland West Indies is linked directly with the availability of new supplies of crude oil, particularly from Venezuela. However, since the United States and South America are expected to become the key suppliers of European war demands the construction programs in Venezuela and the Netherland West Indies are important factors.

Current construction on the Netherland West Indies island of Aruba will increase capacity of the Lago Oil & Transport Co., Ltd.'s refinery there to 285,000 bbl. per day of crude, and 240,000 bbl. per day of cracking facilities.

Standard Oil Co. of Venezuela is building a complete refinery at Carapito, Venezuela, which will have a crude-oil capacity of 26,800 bbl. per day and cracking facilities for 22,800 bbl. per day.

Because of the Royal Dutch-Shell group's participation in approximately a quarter of the production from the Oficina field in Venezuela, which discharged is first cargo of crude through a new 16-in. pipe line and over a new shipping dock at Guanta, the Curacao refinery has been expanded to provide ample processing capacity. The Curacao refinery is operated by Cuarcaoasche Petroleum Industrie Mij. and the capacity is approximately 200,000 bbl. per day.

High-Quality Fuels

Natural deficiencies of gasoline derived from most Venezuela crude by conventional processes has been the cause of more recent refinery construction in the Netherland West Indies. Full advantage is now being taken of alkylation, polymerization and gas-recovery systems to produce the higher quality gasolines for blending with the normally inferior grades. Liberal use of natural gasoline, imports of isooctane from the United States and tetraethyl lead enables the Netherland West Indies refineries to ship motor fuel suitable for aviation engines and similar war equipment.

Under conditions prevailing up to the present, but soon to be altered, the gasoline available to Venezuelan motorists had an octane rating of about 53 to 58, rendering unsatisfactory service in engines with compression ratios of the order of 6:1. As early as 1936, Standard Oil Co. of Venezuela posed the question of treating gasoline for consumption in that country with tetraethyl lead. The Venezuelan ministry of health set up impractical regulations making distribution of lead-treated gasoline impossible.

Reports from Venezuela indicate that the modern combination viscosity-breaking units, under construction at Carapito, will produce finished, untreated motor fuel of 70 octane which will become available before the end of this year. Objectionable sections of the 1936 decree issued by the ministry of health have been removed, and it will be possible, under the revised regulations, to blend tetraethyl lead with motor fuel, bringing gasoline in Venezuela up to the standards observed in the United States and most foreign countries.

Inquiries on new refinery engineering and construction plans from belligerent and neutral European countries have been reaching offices of American contracting firms in increasing volume since war was declared. Government subsidy of 50 to 100 per cent of the cost of new refinery construction under consideration in Europe is reported, since the private companies, particularly American concerns, are unwilling to extend their investments in that section of the world in existing circumstances. There is no way of analyzing current inquiries for refinery equipment from Europe from a standpoint of predicting whether bonafide orders will result. There is the troublesome problem of foreign exchange in addition to questions of labor and materials.

Since the first of this year Anglo-Iranian Oil Co., Ltd., has completed two naphtha reversion units, each with a capacity of 15,000 bbl. per day. The same plant has been equipped with a 1,500-bbl. per day catalytic polymerization unit and two feed-recovery units.

Compagnie Francaise de Raffinage has completed a 12,000-bbl. combination unit at Martigues and a 4,000-bbl. naphtha reforming unit was added to the L'Avera refinery of Societe de Raffinage des Huiles de Petrole.

Refinery Expansion

McColl-Frontenac Acquires $1,850,000 Properties

Expansion of the McColl-Frontenac Oil Co., 34 per cent owned by the Texas Corp., by acquisition of Texas Corp.'s western Canadian oil-marketing and refining properties has been announced in Montreal by J. A. Wales, president of McColl-Frontenac. The transaction will become effective as of February 1, 1940, and will involve new financing through the sale of 150,910 shares of new no-par common stock to shareholders at $10 a share.

Properties to be acquired are those of the Texas Co. of Canada in the provinces of Saskatchewan, Alberta, and British Columbia. The fixed assets are to be purchased at the depreciation book value, while all receivables are to be purchased at the book value and will be guaranteed by the Texas Co. Inventories will be valued at laid-down cost, but not exceeding replacement cost. Total cost of fixed and current assets will be approximately $1,850,000.

Republic Builds Plant At Tampa, Fla.

TAMPA, Fla.—The Republic Oil Refining Co. has awarded a contract to G. A. Miller Co., Inc., for construction of a wholesale plant here at a cost of $70,000. Work on the project will get under way immediately and it is expected that it will be completed and ready for operation by January 1.

Company officials said that oil and gasoline will be shipped here in tank steamers from the company's refinery in Texas City, Tex., and stored in five 25,000-bbl. tanks. The tanks, warehouses, loading rack for tank cars and pipe line running from the estuary for discharging from ships will be the first unit of the plant.

T. J. Pitts, supervisor of terminals, is in Tampa to represent the company and have charge of construction work. The company eventually plans to can motor oil here for distribution.

Bribery Charge Denied In Ethyl Gasoline Suit

TRENTON, N. J.—Six major corporations denied through counsel November 1 charges they bribed or coerced witnesses to stay away from trial of a chancery court suit hinging on the alleged theft of the secret formula for making Ethyl Gasoline.

The Howard-Vaughan Co., a defunct Buffalo, N. Y., firm seeking to share in Ethyl sales profits it estimated at $750,000,000, charged its two key witnesses were kept out of court by the "pernicious machinations" of the defendants, "their sleuths and their myrmidons."

A blanket denial of all charges was made by the defendants, Standard Oil Co. (New Jersey), Standard Oil Co. of New Jersey, General Motors Corp., Socony-Vacuum Oil Co., Inc., Ethyl Gasoline Corp., and E. I. du Pont De Nemours & Co.

Kansas Refinery Contracts For Supply of Crude

GARDEN CITY, Kans.—The Shallow Water Refining Co. plant 25 miles north of Garden City has acquired a new source of crude-oil supplies to supplement the 1,000 bbl. a day produced by the Atlantic Refining Co.'s Scott and Finney County wells, the farthest west in Kansas.

C. L. Crenshaw, refinery manager, announced a contract for the purchase of the Continental Oil Co.'s Ness County production. The Continental has seven high-gravity producers with an allowable of about 200 bbl. a day, promised by the Continental.

The Shallow Water plant, lacking crude, has been operating far below capacity. The Continental, on the other hand, heretofore has lacked a satisfactory market for its Ness County production.

One of the principal immediate effects will be an increase in the supply of the refinery's new product, 72-octane gasoline, announced a few weeks ago following the installation of the new 750-bbl. cracking unit.

New Technological Division Organized by Ethyl Corp.

A refinery-technology division to aid refiners in meeting the problems arising from advances in petroleum chemistry and automotive engineering has been

WILLIAM H. HUBNER

established by the Ethyl Gasoline Corp., it is announced by Dr. Graham Edgar, vice president of the corporation.

The new division will be located at Detroit, and, working in close association with the research staff of the Ethyl corporation, will begin operations about January 1, 1940. It will be headed by William H. Hubner, who for the past 10 years has been connected with the Universal Oil Products Co., Chicago. J. B. Taylor, Jr., of the Ethyl Engineering Laboratories at Detroit, has been chosen as his assistant.

Developments affecting the behavior of tetraethyl lead in gasolines of different types have created a need for organized technological cooperation with the refining industry, Dr. Edgar explained.

"With the advance of progress in refining methods and the rapid increase in our knowledge of the relations between the characteristics of gasoline and its performance in automobiles, it is becoming difficult for the individual refiner to determine the most practicable procedure for producing the best gasoline and producing it most economically."

Aviation-Gasoline Survey By Bureau of Mines

A survey of the production of aviation gasoline is planned as a new feature of the monthly petroleum report of the Bureau of Mines. The bureau is now sending to all gasoline refiners a special questionnaire asking statistics on finished aviation gasolines by grades at all plants. The questionnaire asks the grade name, average octane number, average vapor pressure, and production in barrels during the month. It also asks for stocks of finished aviation gasoline on hand at the end of the month and the present maximum capacity for producing aviation gasoline per month. If sufficient replies are obtained this month the totals will be included in the monthly report for October, and it is planned to make this a regular feature of the report in the future.

Socony-Vacuum Develops New Diesel Fuel

A new diesel-engine fuel said to speed starting, eliminate knock, give smoother operation, and reduce ignition pressure has been developed in the laboratories of the Socony-Vacuum Oil Co., Inc., of New York. This is indicated in a patent (No. 2174680) won by Darwin E. Badertscher and George S. Crandall of Woodbury, N. J. One of the ingredients is acetic anhydride, which is dissolved in ordinary diesel oil and then oxidized with a peroxide compound to be converted into what chemists call "diacetyl peroxide."

Cracking-Residue Imports Subject to Import Tax

WASHINGTON, D. C.—Petroleum cracking-still residue produced in Canada from crude oil exported from the United States is subject to the import tax on petroleum products when imported into the United States, it has been decided by the U. S. Court of Customs and Patent Appeals in a case brought by the Shell Oil Co. of Canada, Ltd.

The company purchased crude in Texas and Louisiana for refining in Montreal, Canada, and shipped the residue to Cleveland, Ohio. It claimed free entry on the ground that the material was the product of the United States returned to this country without being advanced in value or improved in condition. The court held that, regardless of the intrinsic value of the residue as compared with the value of crude oil exported, the residue was not a natural product, but was manufactured, and therefore, does not come within the provision of the tariff law permitting free entry for American goods returned.

Danube Constructs Tetraethyl Plant

AMARILLO, Tex.—The Danube Oil Co. has just completed an Ethyl blending plant at its refinery in Borger. Cost of installation was approximately $10,000; it was built under the supervision of engineers of the Ethyl organization.

Danube has already been granted a license for blending tetraethyl lead with its gasoline by the Ethyl Gasoline Corp. and this week will begin putting out the new product.

The Danube company refinery has a capacity of 1,000 bbl. per day.

Regina Refinery

REGINA, Sask.—Consumers Cooperative Refineries has started work on a new 1,500-bbl. refining plant to cost $250,000 and to be in operation next spring. The present 500-bbl. plant will be maintained as a standby.

Chunks of dry ice, or frozen carbon dioxide, dumped into burning gasoline, oil or naphtha, will quickly extinguish the blaze, according to a patent (No. 2174606) granted to Xavier B. Tansill of New York.

New Pool in White County, Southeastern Illinois

Phillips Petroleum Co. opened a pool in White County, Illinois, with its No. 1 Garner in Section 36-4s-10e, which flowed at the rate of 450 bbl. per day from McClosky lime, total depth 2,961 ft. In another part of the county Eason Oil Co.'s No. 2 Storms, in the Storms gas field, produced 70 bbl. of oil in 3 hours from Waltersburg sand.

Natural-Gas News

Columbia Consent Decree Questioned by Nye

WASHINGTON, D. C.—Sen. Gerald P. Nye (Republican, North Dakota) has asked Atty. Gen. Frank Murphy to withhold a consent decree in the antitrust suit against Columbia Gas & Electric Corp. until the federal Monopoly Committee can hear complaints against the proposal. He charged the Department of Justice with "unwillingness to proceed sternly against a defendant of tremendous wealth and influence."

Reduced Rates Offered Two Texas Towns

AUSTIN, Tex.—Reduced rates offered by United Gas Corp. for two Harris County communities were adopted by the Railroad Commission, effective from November 1 pending further orders after hearings. A hearing on rates at Highland was postponed from November 7 to November 14 and scheduled for Houston. A date was not set for a hearing on rates at Crosby.

Rates offered by the company are a minimum of $1 for the first 200 cu. ft., both residential and commercial. Residential rates would be 70 cents per 1,000 cu. ft. for the next 2,800 cu. ft., 60 cents per 1,000 cu. ft. for the next 7,000 cu. ft., and 50 cents thereafter. In the commercial scale the rates per 1,000 cu. ft. over the first 200 cu. ft. would be 70 cents on the next 4,800 cu. ft., 60 cents on the next 10,000 cu. ft., and 50 cents thereafter.

Helium Reserves Are Ample For Emergencies, Ickes Says

Reserves of helium more than ample for any emergency requirements now foreseen are possessed by the United States alone among the world's nations, Secretary of the Interior Harold L. Ickes announced recently. Conservatively estimated, the secretary reported, the natural-gas reserves which supply the government's Amarillo, Tex., helium plant contain at least 100,000,000,000 cu. ft., equivalent, with a 1.8 per cent helium content, to a reserve of 1,800,000,000 cu. ft. of helium, or about 200 times the average annual production during the last 10 years.

The Amarillo plant, only one in operation in the country, although the Government owns two others in Kansas and Colorado, is supplying present demands by running at about one-quarter of installed capacity. This capacity could be increased again by 50 per cent by installation of one production unit in existing buildings.

In 1917, when the United States entered the World War, helium was a chemical curiosity that had been produced only in laboratories. In the intervening two decades agencies of the federal Government have produced about 140,000,000 cu. ft. of helium; precent annual production of 6,000,000 cu. ft. is used for medical, scientific, and various commercial purposes.

Changes in Continental Oil Co. Purchasing Department

Appointment of W. H. O'Connor to be director of purchases for Continental Oil Co. has been announced by Pres. Dan Moran. He has been general purchasing agent for 20 years. Simultaneously came announcement of appointment of George W. Evans to be general purchasing agent with headquarters in Ponca City. He had been assistant general purchasing agent.

W. H. O'CONNOR *GEORGE W. EVANS*

Pipe-Line News

East St. Louis-East Chicago Line in Operation

Phillips Petroleum Co. has started operation of the new 8-in. gasoline line from East St. Louis to East Chicago. It was constructed by Illana Corp. Present capacity is 20,000 bbl. but it can be increased by adding pumping equipment. The line connects with the old line from Borger, Tex., at the East St. Louis terminal and runs to a water terminal on the south branch of the Indiana Harbor Ship Channel where storage of 500,000-bbl. capacity has been provided.

Sohio Salem-to-Stoy Pipe Line Completed

MATTOON, Ill.—Last of the current crude-oil pipeline projects in southern Illinois was completed November 2 when Williams Brothers Construction Co. finished Sohio Corp.'s 10-in. 70-mile pipe line from the Salem field to Stoy, Ill., where connection has been established with the old Tide Water line recently purchased by Sohio as an outlet for Illinois crude to the east. The line is being tested and should be in service in a few days. The laying of this line was accomplished with unusual rapidity, only a little more than a month being required from start to finish.

Contract for Pipe Let For Ben Bolt Line

CORPUS CHRISTI, Tex.—M.-A.-R. Pipe Line Co. of Corpus Christi, has let contract for materials for its 35-mile pipe line from the Saxet field in Nueces County to the Ben Bolt field in Jim Wells County of Southwest Texas. Line will be 6⅝ in. with 10 miles of 4-in. gathering line in the field. Construction will start at once and the line is expected to be in operation between December 1 and 15.

Oil Pipe Line and Terminal Division for Continental

The Continental Oil Co. announces the establishment of an oil pipe line and terminal division and an oil-trading division resulting in the promotion of several employes, according to J. G. Dyer, vice president in charge of production and drilling.

A. C. Wilkinson, for 7 years superintendent of the Oklahoma-Kansas division, has been appointed general superintendent of the oil pipe line and terminal division, with headquarters in Ponca City. He joined Continental in the pipe-line department in 1924.

T. A. Van Griethuysen will be superintendent of the oil-trading division. He joined Continental in 1929 and has been with the production department since 1935.

Also announced was the promotion of Ira D. Pierson, formerly Montana production district superintendent, to be assistant general superintendent at Denver, in the office of J. C. Johnston, general superintendent. Establishment of the Colorado production district was announced, to be supervised by C. H. Rankin, who will be transferred to Denver from Shiprock, N. M. George Cox, former district superintendent at Florence, Colo., will replace Mr. Rankin at Shiprock. J. C. Thomas has been appointed to be superintendent of the Montana district, with headquarters in Billings. W. C. Rice, formerly superintendent of the eastern Wyoming district, has been made superintendent in charge of operations in the entire state.

Tuscarora Adding Short Loops to Gasoline Line

READING, Pa.—Approximately 17 miles of 8-in. pipe line will be laid between this city and Barto to increase the capacity of the Tuscarora gasoline pipe-line system. Construction will be done by Sheehan Brothers, pipeline contractors of Tulsa.

Continental Starts Work on New Kansas Pipe Line

McPHERSON, Kans.—Continental Oil Co. has started work on a 12-mile oil line from its trunk line in the southwestern part of McPherson County to Globe Oil & Refining Co.'s refinery here. The company has a contract to supply western Kansas crude to the plant.

Transit & Storage Co. Looping Crude Line

PORT HURON, Mich.—Transit & Storage Co., of this city, has closed a contract with Sheehan Brothers, pipe-line contractors of Tulsa, for looping a portion of the former's line from Cygnet, Ohio, to this city. The loops will include 68 miles of 8-in. pipe and 6 miles of 6-in. The additions will permit the company to increase its deliveries of crude oil to the 26,000-bbl. refinery of Imperial Oil, Ltd., at Sarnia, Ont., Canada.

Natural Gasoline

Coastal Recycling Corp. Will Build Plant

CORPUS CHRISTI, Tex.—Coastal Recycling Corp. will start soon construction of a recycling plant with capacity of 50,000,000 cu. ft. of gas daily, in the Agua Dulce field, Nueces County. It recently purchased leases on 6,000 acres of proved production in Agua Dulce and adjacent fields. It also has started construction on the addition to its recycling plant now in operation in the Stratton field. Negotiations are under way for looping of the company's 26-mile 4-in. condensate line to Corpus Christi, and for erection of a large reforming plant on the ship channel and a terminal capable of handling around 10,000 bbl.. of crude oil daily.

50,000-Gal. Plant Announced For Southeast New Mexico

MIDLAND, Tex.—A 50,000-gal. daily capacity natural gasoline plant will be built by the El Paso Natural Gas Co. north of Jal in Southeast New Mexico, it was announced by C. C. Cragin, vice president and general manager of the company, last week. The plant will be of the absorption type and will include facilities for recovering butane and propane in addition to natural gasoline. Preliminary surveys have been made on the site of the plant, which will cost about $1,000,000.

PROGRAMS AND MEETINGS

Oklahoma-Kansas Division Mid-Continent Meeting

The annual membership meeting of the Oklahoma-Kansas division of the Mid-Continent Oil and Gas Association held in Tulsa November 2 was attended by more than a hundred members. Guy T. Berry, Independence, Kans., and Harry Sharpe and Gerald Gordon, both of Topeka, Kans., delivered brief addresses. Clay Tallman, former chief counsel of the Stanolind companies, was chosen a life member.

Memorial resolutions were also adopted for W. L. Sidwell, Winfield, Kans.; Rollo H. Ford, Okmulgee; Harry Kipp, Ardmore; H. V. Foster, Bartlesville, and L. D. Armstrong, LeRoy Adams, R. J. Sheehan, and James H. Hunter, all of Tulsa.

The officers renamed by the directors were:

Robert S. Kerr, Kerlyn Oil Co., Oklahoma City, president; Frank O. Prior, Stanolind Oil & Gas Co., Tulsa, first vice president; Tom C. Johnson, independent, Wichita, Kans., vice president for western Kansas; Carl Weiner, independent, Chanute, vice president for eastern Kansas; A. W. Ambrose, Cities Service Oil Co., Bartlesville, vice president for northern Oklahoma; Lloyd Noble, Noble Drilling Co., Ardmore, vice president for southern Oklahoma; W. R. Wallace, Magnolia Petroleum Co., Oklahoma City, vice president for western Oklahoma, and Clarel B. Mapes, Tulsa, secretary-treasurer.

Thirty-three members from the division to the general Mid-Continent association board were chosen:

Tulsa—A. M. Blow, Amerada Petroleum Corp.; J. J. Conry, Carter Oil Co.; J. C. Denton, Mid-Continent Petroleum Corp.; Walter W. Fleming, Ohio Oil Co.; Rush Greenslade, Gulf Oil Corp.; E. J. Gorman, Sun Oil Co.; Henry N. Greis, Burke-Greis Oil Co.; Frank B. Long, Oklahoma Natural Gas Co.; C. B. Mapes, Kansas-Oklahoma division; J. D. McNutt, Pure Oil Co.; Harold N. Pardee, Texas Co.; Henry L. Phillips, Sinclair Prairie Oil Co.; Ralph B. Pringle, Tide Water Associated Oil Co.; F. O. Prior, Stanolind Oil & Gas Co.; E. B. Reeser, Barnsdall Oil Co.; L. C. Ritts, Devonian Oil Co.; Ralph B. Roark, Shell Oil Co., Inc., and C. C. Herndon, Skelly Oil Co.

Ardmore—Lloyd Noble, Noble Drilling Co., and Will H. Smith, estate of C. R. Smith.

Bartlesville—K. S. Adams, Phillips Petroleum Co.; A. W. Ambrose, Cities Service Oil Co.; Burdette Blue, Indian Territory Illuminating Oil Co., and William N. Davis.

Oklahoma City—J. Steve Anderson, Anderson-Prichard Oil Corp.; Robert S. Kerr, Kerlyn Oil Co., and W. R. Wallace, Magnolia Petroleum Co.

R. S. KERR *C. B. MAPES*

Independence, Kans.—Guy T. Berry.

Chanute, Kans.—Carl Weiner.

Wichita, Kans.—A. L. Derby, Derby Oil Co.; T. C. Johnson, independent, and Ralph Pryor, Pryor & Lockhart, Inc.

Texas Geologists to Study Central Mineral Region

FORT WORTH, Tex.—A field trip in the northern part of the central mineral region of Texas, jointly sponsored by the Fort Worth Geological Society and the West Texas Geological Society in cooperation with the Texas Academy of Science and departments of the University of Texas, has been set for November 10-12. The group will meet at Mason and Brady on Friday night, spend Saturday morning studying the Cambro-Ordovician section at the San Saba River 10 miles south of Brady, and in the afternoon study like formations in the Honey Creek area. Dr. Fred M. Bullard, of the geology department of the University of Texas, will be in charge of the Saturday trip. At Austin that night at a dinner meeting Dr. Frank Melton of the University of Oklahoma will read a paper on the use of aerial photography in exploratory geology.

On Sunday morning the group, under the guidance of Dr. F. B. Plummer of the department of petroleum engineering, University of Texas, will proceed to the Llano-Burnet area by way of the Buchanan Dam.

Oil Scouts Association Officials Hold Meeting

Officials of the National Oil Scouts Association of America held a meeting in Shreveport, La., at which Jimmie Chisholm, of Houston, Tex., president, presided.

Among those attending were: H. L. Eversberg, Shell Oil Co., Inc., Houston, Tex., chairman of the executive committee; Charles J. Bradley, Texas Co., Tyler, Tex., vice president; Jerry Raisch, Houston, editor of yearbook; Lee A. Adams, Sinclair-Prairie, Oklahoma City, past president; W. N. O'Roark, Standard of Louisiana, Shreveport, member of the board of directors; R. L. Denton, Magnolia Petroleum Co., secretary-treasurer.

Oklahoma Stripper Well Association Meeting

The Oklahoma Stripper Well Association is to hold its 1939 convention meeting in Tulsa December 1, Pres. William A. Goforth announced. The association will join the Tulsa Chamber of Commerce in sponsoring a dinner-luncheon with Gov. Leon C. Phillips as the principal speaker.

Buttram to Be Feature Speaker At West Central Texas Meet

ABILENE, Tex.—Frank Buttram of Oklahoma City, new president of the Independent Petroleum Association of America, will be the featured speaker at the eighth annual meeting of the West Central Texas Oil and Gas Association to be held in Mineral Wells on December 11. He will select his own subject for the address, A. J. Frazier of Ungren & Frazier, Abilene, president of the group stated.

J. C. Hunter of Abilene, past president of the association, is also scheduled for a prominent part on the program. J. D. Sandefer, Breckenridge, has been selected to act as master of ceremonies at the evening banquet. Harold G. Neely, president of Iron Mountain Oil Co., Fort Worth, will preside as chairman. All meetings will be held in the Baker Hotel.

CALENDAR OF EVENTS

November

NATIONAL MOTOR TRUCK SHOW, Navy pier, Chicago, November 8-16.

A.A.P.G., PACIFIC SECTION, fall meeting, Los Angeles, November 9-10.

GAS-LIFT CONFERENCE, at Texas A. & M. College, College Station, addressed by S. F. Shaw, November 9-11.

AMERICAN PETROLEUM INSTITUTE, twentieth annual meeting, Stevens Hotel, Chicago, November 13-17.

TWENTY-FIVE-YEAR CLUB OF PETROLEUM INDUSTRY, first annual meeting and dinner, Stevens Hotel, Chicago, November 14.

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, Providence, R. I., November 15-17.

CALIFORNIA NATURAL GASOLINE ASSOCIATION, annual fall meeting, Los Angeles, Calif., November 17.

December

WEST CENTRAL TEXAS OIL AND GAS ASSOCIATION, Mineral Wells, Tex., December 11.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, Philadelphia, Pa., December 4-7.

PETROLEUM ELECTRIC POWER ASSOCIATION, eleventh annual conference, Texas State Hotel, Houston, Tex., December 14-15.

January 1940

SOCIETY OF AUTOMOTIVE ENGINEERS, annual meeting, Book-Cadillac Hotel, Detroit, Mich., January 15-19.

February

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, New York, February 12-15.

April

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, twenty-fifth annual meeting, Stevens Hotel, Chicago, April 10-12.

AMERICAN PETROLEUM INSTITUTE, eastern district, Division of Production, Columbus, Ohio, April 11-12.

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Cleveland Hotel, Cleveland, Ohio, April 18-19.

May

NATURAL GASOLINE ASSOCIATION OF AMERICA, annual convention, Hotel Tulsa, Tulsa, May 15-17.

INTERNATIONAL PETROLEUM EXPOSITION, Tulsa, May 18-25.

This picture was taken from the derrick floor of an offset hole being drilled near the crater of a well which blew out of control. The gas coming from the old hole is bubbling up through the mud. This job caused the engineers unusual concern because the crater of the old well continued to widen. This occurred in the McFaddin field of Victoria County in South Texas and a complete discussion of the field's development and operation starts on the following page

ENGINEERING & OPERATING

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In This Section

ADVANCED ENGINEERING IDEAS USED IN HIGH-PRESSURE FIELD

By Neil Williams ..... **Page 30**

The regularity of the producing horizon and the symmetry of the area comprising the McFaddin field of Victoria County, Texas, have encouraged the application of the most orderly engineering developments there. The work is described here including maps showing the geologic structure.

CORRELATING GRAVITY MAXIMUM WITH OIL STRUCTURE IN RAMSEY FIELD

By Dr. J. F. Evans ..... **Page 37**

Gravity meters of various kinds have been found useful in oil reconnaissance work. Their application has been general and quite helpful along the Gulf Coast and recently a new field in the Mid-Continent was mapped for the purpose of correlating the reading with known production. The results are reported here including a contour map on which existing wells appear.

THE CASE OF UNITIZATION IN RECYCLING

By George Weber ..... **Page 38**

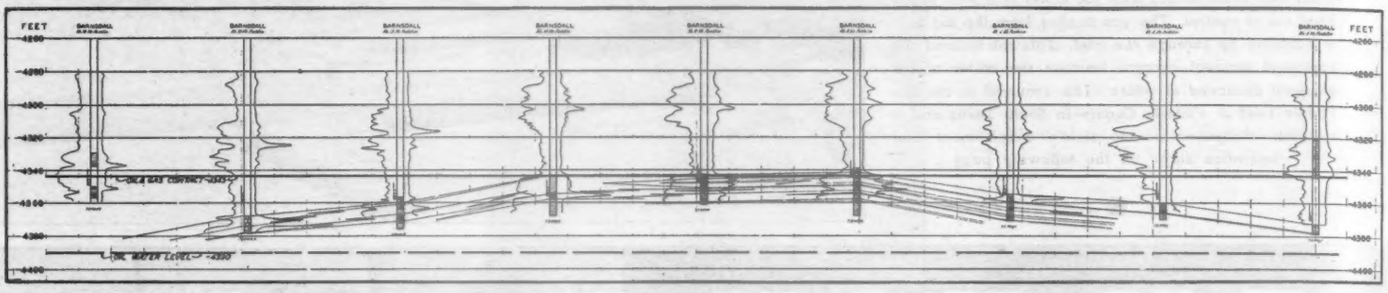
Fifth of a series on high-pressure gas recycling in which the legal phases of the question are discussed—including the basic laws of oil-field development as applied to the modern problems.

OPERATING IDEAS ..... **Page 34**

PROGRESS IN METALS—By W. L. Nelson ..... **Page 44**

QUESTIONS ON TECHNOLOGY—By C. K. Francis, Ph.D. ..... **Page 46**

Advanced Engineering Used in High-Pressure



Northwest-southeast section through the McFaddin field in Victoria County, Texas. Note the contact elevations for oil and water and for oil and gas. The wells shown here are spaced approximately 900 ft. apart

By NEIL WILLIAMS

THE McFaddin field of southern Victoria County in South Texas offers an example of systematic development where unusually symmetrical and uniform structural conditions make possible an effective oil-recovery program. Although not large, either in area or individual well potentials, the field has proved to be attractive, because of the moderately shallow pay horizon, consistent production, and controlled ownership.

The field is in a general area once notorious for its treacherous, high-pressure gas sands. Prior to opening of production by present operators, early exploration was accompanied by a number of major blowouts, leaving gaping craters as reminders of difficulties encountered. However, in the development of the field there has been only one blowout and well loss; this occurred only recently, when the drilling program was nearing conclusion. Otherwise, the field has been drilled up without incident.

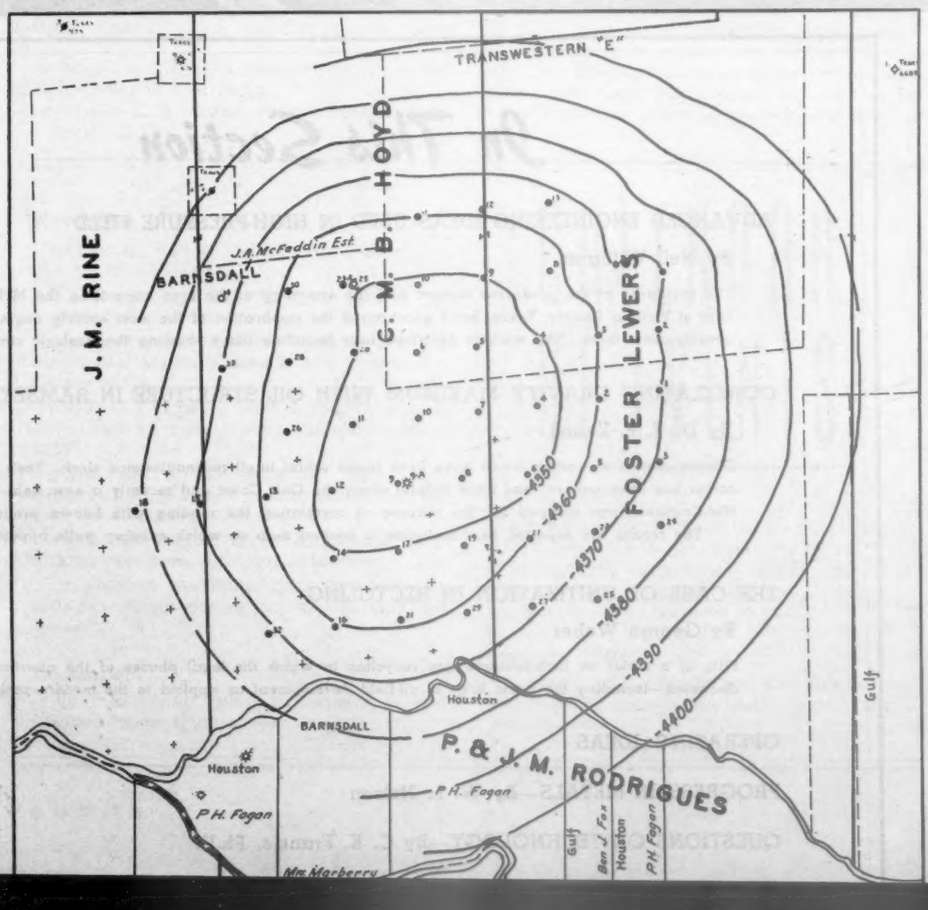
As the limits of production are defined now, the Barnsdall Oil Co. and Transwestern Oil Co. are sole operators. Houston Oil Co. has a small well south of the field, but this was completed in a deeper and entirely separate sand horizon. There the main oil zone was found below the water. The question is raised whether this well should be considered in the McFaddin field. From the beginning, these two companies have cooperated to develop their respective properties for the common ultimate good of the field.

The field is entirely within the confines of the 30,000-acre McFaddin ranch, under a single ownership. The management has been thoroughly in accord with the principles of sound engineering and efficient operation; and as a result, the adoption of an orderly and conservative development and production program has been evolved. Other than the line separating the Barnsdall and Transwestern leases, there were no impediments, such as property subdivisions or divided royalty interests, to be considered in working out a field-wide drilling plan.

Shortly after completing the discovery well, the two companies determined upon what they considered the most effective and conservative development program for the field. This, among other things, provided for spacing the wells, one to 20 acres. The program readily was agreed to by the management of the McFaddin ranch. The plan, together with proposed drilling regulations and casing program, were readily adopted by the Texas Railroad Commission.

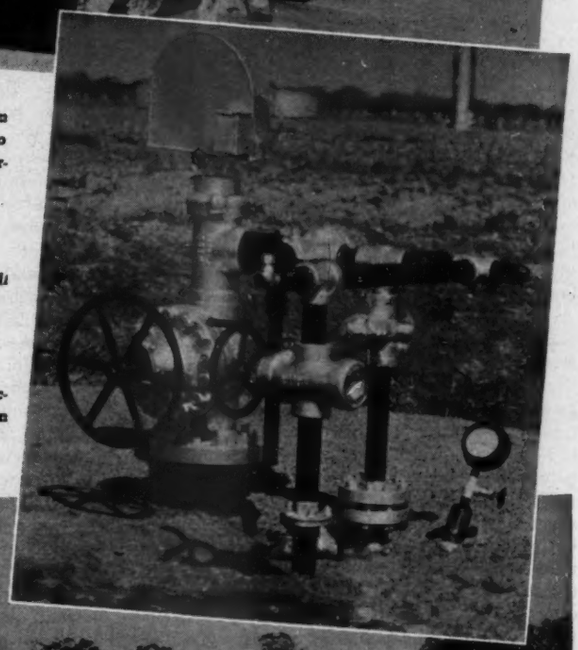
With only one land ownership involved, it was possible to divide the field into 20-acre units of regular and uniform shape, permitting consistent adherence to the spacing pattern adopted. All wells have been located as nearly as possible in the centers of the units. Absence of competitive drilling has enabled the operators to drill in the order desired and to their individual advantage.

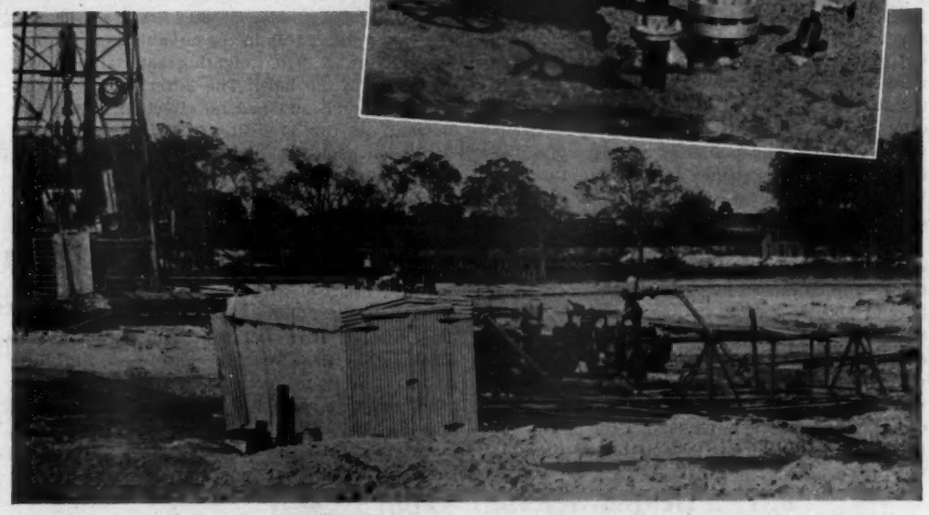
Not including the small well drilled by Houston Oil Co. south of the field, there are 45 producing wells in the field to date. Of these, Barnsdall Oil Co. has 32 and Transwestern Oil Co., 13. In addition, Barnsdall has a gas well completed in a sand shallower than the oil-producing horizon. No dry holes have been drilled in developing the field, the only failure being the one well which blew out before reaching the sand and cratered. Another well, with location on the brink of the crater, 148 ft. from the first hole, has been drilled on that unit to the sand.



Contour map of the McFaddin field in Victoria County, Texas. The contour lines are shown on top of the sand. Symmetry of area as shown by contours is unusual

Ideas Field





Above: Shale shaker of drilling well in McFaddin field discharging cuttings into adjacent blowout crater, from which turbulent water carries the cuttings away

Right: Typical well hookup by Barnsdall Oil Co. in McFaddin field

Below: Barnsdall Oil Co.'s No. 23-A McFaddin, McFaddin field, being drilled on brink of crater of a blowout well

So far as the present producing horizon is concerned, the drilling program is nearing completion. Although no closely defining dry holes have been drilled, outer wells are sufficiently close to the established water table to indicate the production limits are nearly reached. Transwestern Oil Co. acreage is believed to be entirely drilled up; however, the edge might be pushed outward another location at certain places. At present this company has no active drilling operations. Barnsdall Oil Co. considers it has enough remaining undrilled locations to keep the company's one rig working another 5 months on the basis of a well every 12 to 14 days.

The field is on acreage which had been a part of a large block previously held by the Texas Co., on which that company carried on exploration over a period of several years, drilling upwards of a dozen tests. None of these was drilled within the limits of the present field, although one was located only about 1,500 ft. northwest of the northwest edge of the field. The latter was completed as a small well in a 6,200-ft. sand, a sand about 1,800 ft. below the field's producing horizon. This produced for some time before being abandoned. The field's producing sand was encountered by that well. It carried oil showings, although it was structurally low as shown by the large quantities of salt water which accompanied the oil. The initial test, drilled to 6,685 ft. as a dry hole, was about 4,000 ft. northeast. Others were farther northwest or were some distance west.

With the exploration campaign marked by several disastrous blowouts and failure to develop any important production other than gas, the Texas Co. relinquished the block. In 1938 Barnsdall Oil Co. was attracted by showings in Texas Co. wells as well as in a deep test which in the meantime had been drilled by Humble Oil & Refining Co. south of the immediate area across the line in Refugio County. As a result, Barnsdall made a commitment with the McFaddin-ranch management to acquire approximately 2,800 acres covering what now takes in the producing area of the field. Barnsdall geologists had come to the conclusion that the Humble test had found the sand at a point near the oil-water contact and that the sand would pay off if encountered higher up in the direction of the Texas Co. wells. Subsequent determinations of the water table of the field at a level corresponding to the depth at which the sand and showings were encountered in the Humble test has given proof of the relationship of that test to the present field.

It has turned out that the discovery producer is on the extreme east side of the field; to date, it is the most easterly well drilled. As proved up, the productive area of the field takes in only the southwestern portion of Transwestern Oil Co.'s lease, which cuts into the northeastern sector of the field. Barnsdall Oil Co.'s lease extends around the west and south sides of the Transwestern lease.

The structure has been outlined as a domal anticline. Contours on top of the sand are strikingly regular, showing a highly symmetrical structural condition, as previously mentioned. No faulting, either major or minor, has been found within the productive limits. Production is from the Greta sand, a Heterostegina, middle Oligocene, member that has yielded the main production at Greta, about 20 miles southwest of the McFaddin field, and in several other lower Gulf Coast fields. This lies blanketlike over the top and extends down the sides of the structure more or less uniformly in all directions.

At the top of the sand section is a "stringer" sand, running from 20 to 25 ft. thick, which is separated from the main oil zone by a 25-ft. shale break. The stringer, except at outlying downdip position, is entirely above the gas-oil contact, and only in one instance (Barnsdall Oil Co.'s No. 18) has there been any attempt to complete a well in it. That well, on the extreme west edge, found the top of the main sand only a few feet above the water table, but it has a portion of the stringer below the gas-oil contact and made a small well in it.

The main oil zone at its highest point in the center of the field, near the apex of the structure, is found at a minus (subsea) depth of 4,339 ft. (Barnsdall's Nos. 7 and 8). The gas-oil contact has been fairly well established as being at minus 4,343 ft., with the water table determined at minus 4,390 ft. The saturated zone has a maximum thickness of 47 ft. Only near the apex is the top of the main producing zone above the gas-oil contact.

Early in the development of the field it was considered advisable to determine definitely the water table. Completion practices called for setting the flow string of casing just low enough in the top of the sand to get below the gas-oil contact and to then set screen through the producing sand. Unlike perforation completion methods in which casing is set entirely through the section and then perforated in the oil zone, bottoms of the wells need to be kept sufficiently above the water level to prevent intrusion of water. To determine the water table, Barnsdall Oil Co. intentionally drilled its No. 7 through the oil zone into the water, finding the contact at the previously mentioned depth of minus 4,390 ft. Determination of the contact at this depth substantiated previous estimates based

on indications in the deep wildcat drilled by Humble Oil & Refining Co. south of the field.

Perforation completion methods, which have been followed more generally in recent years, have not been adopted due to certain peculiarities of this sand which make screen setting more adaptable. These peculiarities also exist in the same sand in other fields of South Texas.

A 14 to 16-ft. stratum, in which the sand is broken somewhat irregularly by streaks of hard limy shale, extends through the upper portion of the oil zone. This has complicated the completion of wells, particularly in the earlier development before characteristics of the stratum were learned. At positions sufficiently high on the structure for there to be a safe interval above the water table to permit drilling entirely through the lime-streaked stratum, no particular difficulties have been involved. However, where the stratum is close to the water, leaving little or no margin of safety below it, and where production has been limited to thin sand lenses within or above the lime streaks, operators have had to exercise care in completions.

Except in one well (Barnsdall's No. 23), which blew out and cratered, gas sands in the area have given no particular trouble. From the beginning, both operators, recognizing the hazards, have exercised every possible precaution and provided adequate facilities to safeguard the wells. Considerable trouble had been expected in getting through the shallows sands down to 700 ft., as these sands at one time had been heavily charged with high-pressure gas from deep-well blowouts. However, it was found that this gas had been largely dissipated. Gas blows were encountered in drilling these shallow sands, and in early wells operators spent much time in trying to kill or control them, but subsequently it was learned that this gas existed in pockets and would quickly blow off without damage if allowed to do so. Since then, no effort has been made to kill the gas pressure found in the shallow sands; instead, a well, when drilling is suspended, is opened and permitted to blow. Within an hour or two the gas is gone and operations can be resumed.

Main gas sands are encountered around 2,400 ft. and 3,200 ft., with a heavy artesian water flow, believed to be caused by gas pressure in the sand, around 1,500 ft. One well (Barnsdall's No. 9) was intentionally stopped and completed in the 3,200-ft. sand to provide gas for drilling operations. This well was completed at a total depth of 3,166 ft. It is believed that the blowout in Barnsdall's No. 23 came either from the latter sand or the one at 2,400 ft., although bottom of the hole at the time was 4,060 ft.

So far the well, which has formed a crater extending about 300 ft. in diameter, has not been killed, although several attempts have been made to pump water and mud into the sands by means of a "relief" well.

The latter well, No. 23-A, is located 148 ft. west of the location of the blowout well, with the rig set directly on the brink of the crater. As an interesting sidelight, it may be noted that the shale shaker is set over the edge of the crater and discharges its undesired cuttings into the crater, where the turbulent water immediately carries them away. This well was drilled to the top of the producing zone, where a 7-in. flow string was set and cemented in the conventional manner with a view toward completion as an oil well to take the place of the blowout well in that 20-acre unit. The only difference in its drilling was that the hole was underreamed through all gas sands, suspected of giving trouble, starting about 20 ft. above and ending about 20 ft. below; consequently, a better cement job could be effected through these sections. To make certain of adequate cementing at these points, the pipe was perforated at the respective levels, and cement was squeezed behind the pipe. Incidentally, although this well is only 148 ft. from the blowout well, the gas sands gave no trouble, and the well was drilled without incidents worth noting.

It was the plan, after cementing the flow string on the main producing horizon to perforate, in order, each of the gas sands suspected of giving the trouble and attempt to pump water and mud into these sands in hopes of killing the pressures. First perforations were made in the 3,200-ft. sand, into which was pumped 1,400 bbl. of weighting-material mud, followed by 600 bbl. of 11-lb. native mud, and in turn 3,000 bbl. of water. No results were observed. With these perforations squeezed, the casing was perforated next at the 2,400-ft. level. Into this sand 8,000 bbl. of water first was pumped. The water showed up in the adjoining crater, and then 3,400 ft. of 19-lb. weighting-material mud was pumped into the hole. The latter, however, did not go through and had no effect in killing the blowout. As this is written, no further attempts have been made to kill the well, and it is likely the company will proceed with completing it as a producer in the oil pay and then attempt to drill a directional well.

The casing program of the field calls for running a relatively long string of surface casing, occasioned by the necessity of setting below the heavy artesian water flow encountered around 1,500 ft. Of particular interest, Barnsdall has been setting 9⅝-in. pipe for this string and continues to use 7-in. flow string. The 9⅝-in. pipe forced reduction in hole to 8½ to 8¾ in., which makes a rather close clearance for the 7-in. casing, but no trouble has been experienced in getting the latter to the bottom. At first, 10¾-in. pipe was used on the surface string, but the smaller pipe has effected substantial economies. With the smaller surface casing, only 13⅜-in. conductor pipe is used, two joints being set. Formerly 16-in. conductor was set.

It has been the practice to cement both the conductor and the surface casing to the top, using approximately 150 sacks of cement on the former and from 525 to 530 sacks on the latter. Hole for the 7-in. flow string is stopped in the top of the main oil sand, care being taken to place the bottom just deep enough for the casing to be cemented below the gas-oil contact (minus 4,343 ft.). To facilitate adequate cementing of the flow string through the gas section, it has been Barnsdall's practice to underream the hole to 12½ in. from a point above the top of the stringer sand. Approximately 350 sacks of cement are used on this string.

After cement has set the required time and the plug has been drilled, the hole is deepened into the sand to the desired producing depth, where screen is set and tubing run for completion in conventional Gulf Coast completion practice. Due to the fact that the sand is shaly, with the shale having bentonitic characteristics that cause it to swell when in contact with water, thus tending to seal off the sand, it has been customary to clean the wells with oil. Water circulation is used at the start; but when the hole has been partially unloaded of mud, the water is replaced with oil. One reason the oil zone is not drilled into before running the flow string is that it is not desired to leave the mud stand on the formation.

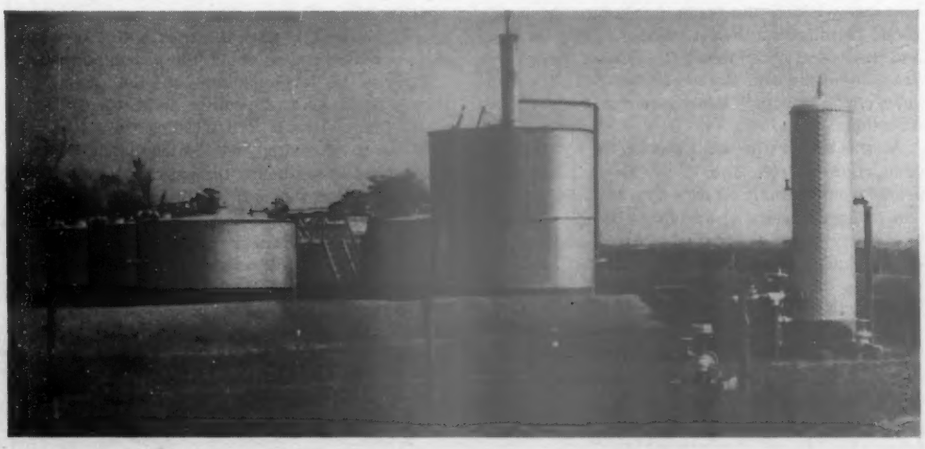
Use Mud Analyses

Of special interest so far as Barnsdall's operations are concerned has been the logging and correlating of oil and gas sands by mud analyses. Methods used were developed by the company's research department, and it has been at McFaddin that these methods have found their first general practical application. Mud analysis logs have been made in all except the first few wells and have been found to check closely with electrical coring surveys, which also have been made in all wells. In no instance have the findings of the two logging methods varied more than 2 ft. So accurate have been the determinations by mud analyses in comparison with electrical logs, that in the most recent wells sand points have been picked and well set tings made exclusively on the strength of those determinations.

In mud-analysis logging methods followed by this company, the sands, thickness of the sands, and their contents and levels are determined as drilled by detection of the gas, oil, or salt water in the mud returns from those formations. For detection of the presence and relative quantities of oil in the formation, frequent samples taken from the mud stream at the well discharge are examined under ultraviolet light rays. Depths from which the samples come are indicated continuously on a depth recorder calibrated to the number of pump strokes and measurement of the volume of mud being circulated at the time. Presence of salt water and relative amount are revealed by comparison of samples of the ingoing mud with those taken from the returning mud stream, the depth of the salt-water showings in the hole being calculated on the basis of the time required for the sample to reach the surface.

The presence of gas is indicated by means of a special gas-detector device with which each well is equipped and which records continuously the percentage of gas carried in the mud-discharge stream. The device, which operates through a trap mounted on the mud line from the well, is sensitive to as little as 0.25 per cent gas in the mud stream. With it, the approach to a gas or oil sand can be indicated several feet in advance of drilling into the stratum. Thus, in the case of high gas

(Continued on Page 43)



Central tank battery and separator installation on Transwestern Oil Co. lease in McFaddin field, Victoria County, Texas

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Operating Ideas

Brace for Pull Bars at Central Geared Power

Centrally located geared powers are being widely used in the Illinois basin, particularly on properties having a large number of wells. Each power will pull approximately 26 wells. Most of the powers are equipped with a 2½ by ⅞-in. flat pull bar from the crank to the knockoff block. When in use, the strain on the rod line helps support the portion of the pull bar beyond the last hardwood bridge. To prevent bending while not connected one company welds a T-iron to the upper side of the pull bar.

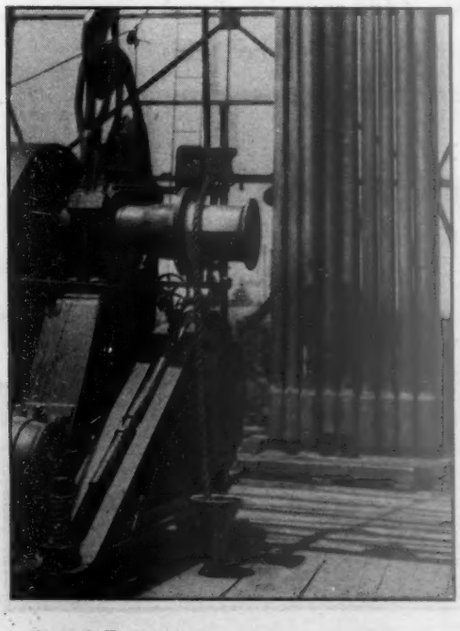
Extension Handle for Tank Valves

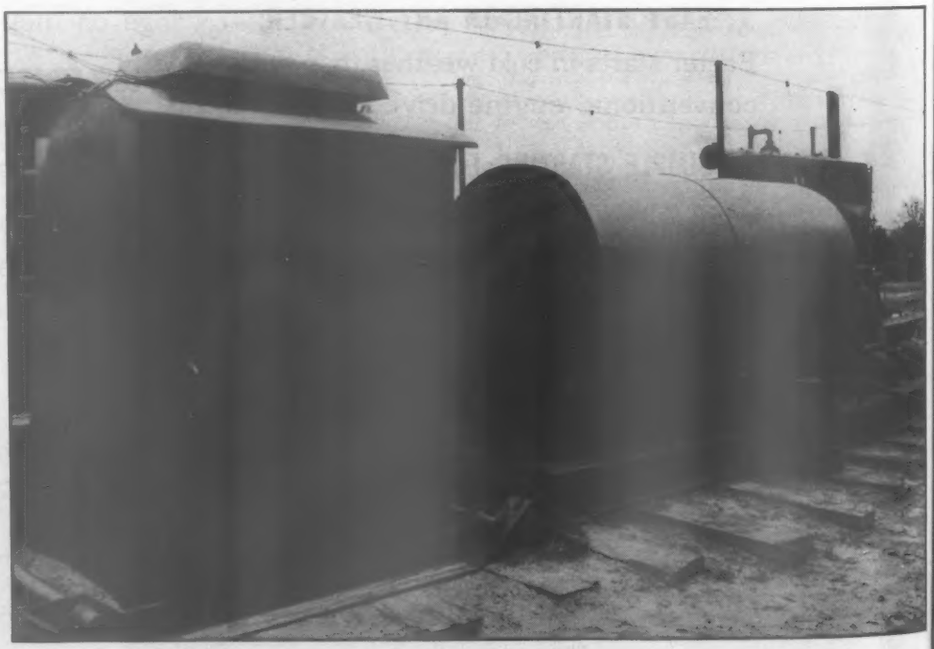
Where tank-vent valves of a lease battery are on the part of a tank roof which is opposite the cat walk, it was necessary to climb across the tank to manipulate the hand wheels; this involves needless loss of time and a chance of accident. To simplify vent-valve control, extension handles were made of sucker rod, but instead of a single offset being put in the end to provide crank or leverage for operating the gate, a double

throw was made, offsetting each hand hold or grip some 6 in. apart from the main line or axis of the extension rod. By taking an offset in each hand, a switcher can open or close a valve in a third of the time the usual crank can be turned; furthermore, he can gage more accurately the pressure with which the valve is forced against its seat. With the extension of the proper length for the inner offset to fit over the handrail automatic locking for the valve is provided; this prevents accidental shifting in position due to the effect of vibration.

Device for Coiling Catline

A drum is placed under the derrick floor in which a cone serves to guide the rope so that it will coil evenly without tangling. Above the cathead is a guide clamp which keeps the line from slacking off when not in use.





Housing for Electrical Drilling Equipment

All switches for the drilling rig are protected by the steel house shown in the foreground which is mounted on skids. The other housing covers the generator and exciter. With equipment protected in this way it is not exposed to the weather and at the same time is portable.

Correlating Gravity Maximum With Oil Structure in Ramsey Field

By DR. J. F. EVANS
Gravimetric Survey Corp.

A DEFINITE correlation between the location of gravity maxima and those of salt domes in the Gulf Coast region has for a number of years been known to exist. Such minima have been extensively searched for with a variety of geophysical instruments, such as pendulums and torsion balances, and more recently with gravity meters, which have largely displaced the older instruments in gravity prospecting.

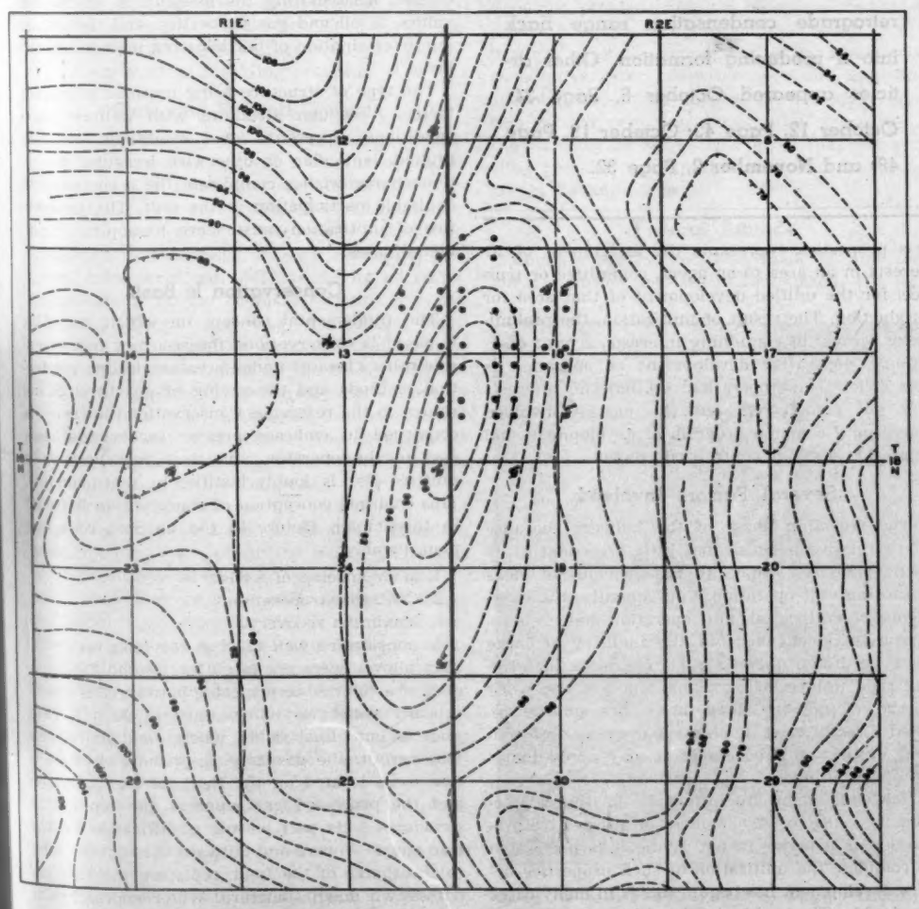
Under the different structural conditions existing in the Mid-Continent area of Oklahoma and Kansas, however, some question has been raised as to whether any relation might be found there between gravitational features and oil-producing structures. In this region, the expected density difference between rock formations are generally smaller than that between the salt plugs of the Gulf Coast and the overlying shale mantle. In the particular case of the Ramsey field of Oklahoma, to be dealt with here, a very definite correlation has been found to exist between a measurable gravitational feature (a maximum) and a producing oil structure.

Location of Ramsey Field

The Ramsey field is located in Payne County, Oklahoma, approximately 8 miles southwest of Stillwater. Within an area extending roughly 1 mile north and south, and ½ mile east and west, 32 producing wells have been drilled to the upper Wilcox sand (Simpson group) at an average depth of about 4,750 ft. Some of these wells had an initial potential of about 13,000 bbl. Surface rocks in the field are light shales and sandstones of Permian age. The topography is steeply rolling, the relief between valleys and ridges being of the order of 100 ft.

To determine the location and magnitude of the gravitational anomaly, if any, associated with the Ramsey field, an area about the size of a township around the producing field was worked with a gravity meter. Seventy stations were taken, the equivalent of two ordinary days' work with the instrument. Elevations were measured to an accuracy of ½ ft., or better, using level shots only, the sensitivity of the gravity meter being such that elevation differences of that amount are equal to about 0.4 of a unit (one unit equaling 10^{-4} C.G.S. units of gravity).

For the interpretation of the gravity readings, an elevation correction factor was determined by the usual method of running a "density" profile along a line somewhat removed from the anomaly. It resulted that the magnitude of the anomaly was such that its location did not depend in a critical way upon the value of the elevation correction factor.

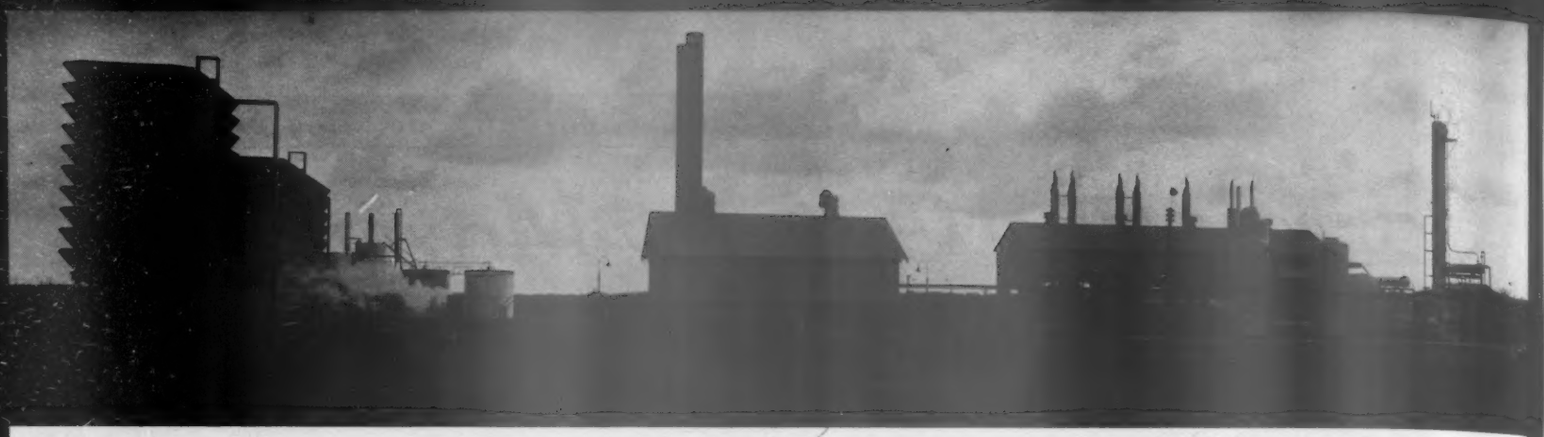


Gravity values plotted to reveal contours in the Ramsey field of Oklahoma

High Very Pronounced

The readings were also corrected for the regional gravitational gradient found to exist in the Ramsey field vicinity. This regional gradient is apparently accounted for by the increasing depth of the basement rock from east to west. The gravity maximum of the Ramsey field itself, as shown by the gravity meter, presumably arises from the granite plug believed to be at the core of the structure. This high was very pronounced even without the correction for regional gradient, but its position was shifted toward the east a few hundred feet.

The final result is clearly shown in part in the accompanying figure. The reader is cautioned to bear in mind that the contouring shown thereon is in gravity values and not on structural values. The contoured gravity maximum of approximately 10 "units" is flanked on both the east and west sides by well-defined minima. The maximum, it may be mentioned, is comparable in magnitude with that of the minima found over some of the smaller salt domes in the Gulf Coast region. This maximum appeared to be strictly localized, its entire area being somewhat less than 2 sq. miles. The two top closed contours include the major portion of the producing area. It appeared in this particular case that a well drilled upon this gravity maximum would have secured production. In any event, a region was clearly outlined, over which a comparatively small amount of seismograph work would have been sufficient to detail the producing structure. In conclusion, the work done in this area clearly demonstrates the value of the gravity meter as a rapid reconnaissance instrument in the Mid-Continent area.



New gasoline plant in the Benevadies field of Texas. Owned by the Duval Gasoline Co.

The Case of Unitization in Recycling

By GEORGE WEBER

UNITIZATION is becoming a common term in the oil industry. The trend toward closer cooperation among operators is prompted by a recognition of the advantages it affords. But while it is a factor to be considered by the industry as a whole, it is doubly vital in the successful development of recycling programs.

Recycling involves the production of high-pressure gas, the extraction of a liquid condensate in the retrograde-pressure range and the return of the processed gas to the original reservoir. The object of a complete recycling project is to process all virgin gas in a reservoir, obtaining a maximum yield of recoverable condensate through use of the returned gas in pressure maintenance, at the same time conserving that gas for future consumption when its recycling purpose has been fulfilled.

This conception of recycling assumes the gas-condensate field as a unit, to be developed as such to depletion of the condensate fraction of the original gas. A field system outlining the location of input and production wells is necessary to obtain efficient displacement of the rich gas by the lean input gas. A field-wide plan therefore emerges as a basis for carrying out the project.

Few recycling programs now in operation are based on such ideal conditions. Most existing plants process gas from large acreage blocks which justify their immediate needs. However, there are many fields where recycling is feasible, but where subdivided interests defeat the adoption of individual projects. These are the fields where unitization will serve to liquidate frozen production and guarantee an equitable return to the several interests involved.

Limitations to unit operation are present in some types of fields whose irregularity precludes adoption of field plans. Another hindrance to general acceptance of this practice is the misunderstanding of recycling, particularly among lessors leading to a lack of appreciation for the benefits attending cooperation in such a project. In addition, the principles of unitization and pooling are only now finding acceptance in the oil industry itself, so that adoption on a wide scale in so new a phase as recycling would represent an idealism hardly to be readily accepted.

Unitization, as the term is applied to oil and gas properties, represents the assignment of interests in an area to an agent, committee or trustee, for the unified development of that area for production. The result of unitization, the preliminary process of combining interests, is unit operation. Cooperative development of operation is not strictly unit operation, in that the interests are not transferred, but the parties involved agree on a common program of development and operation without centralized control.

HIGH-PRESSURE GAS SERIES

Fifth and concluding article in a series covering every phase of recycling, including the production, processing, and return of high-pressure gas through the retrograde condensation range back into a producing formation. Other articles appeared October 6, Page 34; October 12, Page 43; October 19, Page 48; and November 2, Page 32.

Several Factors Involved

The recycling phase of the industry, because of its relative newness, has little precedent in its own sphere on which to base conclusive ideas regarding unit operation. Consequently, the experience of unitization, unit operation and even cooperative development in the industry at large must be drawn upon to guide operators in forming field unit-recycling plans. Much of the work in the oil industry along these lines may be applied directly to such plans. A discussion of general unitization progress as it may apply to recycling is in order.

Recycling plans are influenced by several factors. The stage of development of prospective production is a major factor. While it is preferable to complete the unitization of such properties before development has begun, this is in many cases impossible. The problems of unitization are made increasingly more difficult in fields already drilled, due to the multiplicity of interests, and the relative values assumed by the divided ownerships. Early unitization has another advantage in effecting savings in providing for wide well spacing and development along the best proven lines of conservation and efficiency.

The presence of oil in the same horizon with high-pressure gas further complicates the procedure, necessitating the assignment of relative values to oil and gas properties, and the resulting determination of participating interests in the project.

The type of structure being unitized is another factor. A regular structure with uniform sand conditions represents ideal conditions, whereas faulted, lenticular or otherwise irregular formation characteristics complicate the assignment of equitable participation in the unit. The generalities of unitization must serve to apply to individual cases.

Conservation Is Basis

The fundamental concept on which recycling is based is conservation: the recovery of condensate otherwise lost under pressure-decline production methods and the saving of gas through its return to the reservoir. Conservation, however, is construed to embrace greater recovery at less cost to the operator, and thus recycling on a unitized plan is doubly justified by that principle. This enlarged conception of conservation is found in three main factors in the unitized recycling plan, namely:

1. Wide spacing of wells.
2. Centralized operation.
3. Maximum recovery.

In considering well spacing, recycling on a field plan allows operators to go far beyond the economy of a 40 or 80-acre spacing pattern. The checkerboard system is unnecessary in such a field plan. In anticlinal fields, where sand uniformity will permit, the gas may be withdrawn from a few wells located on the flank of the structure, and the processed gas input at the top of the structure. This will permit stratification of the lean gas downward and outward through the sand to the flanks of the field, replacing the rich gas withdrawn down structure. Water encroachment may require a variation or reverse of this process,

and irregularities in the subsurface structure may demand modifications of the rimming method, but the wide spacing allowed by any plan represents a substantial saving in development costs.

Through centralized operation, unitization in many fields is the only justification for recycling. Unlike oil properties which can be developed and produced by many individual operators, the gas-condensate production must be recycled, if not in a field system, at least in large blocks and with some plan between competitive projects to prevent channeling of the gas from input to production wells. The maximum recovery of condensate can only be realized by so placing input and production wells that the greatest sweep through the sand will be accomplished. A haphazard arrangement of competitive recycling systems in the same sand of a field may serve to pay out the installed equipment, but as operations progress premature channeling is certain to occur, cutting yields and trapping rich gas in the reservoir.

Equity Basis

While firmly justified on the basis of conservation, unitization further serves recycling operations with a method for equitable participation of all field interests in costs and profits of development and operation. It entirely abrogates the rule of capture, which modern engineering and geological knowledge reveal as an outmoded principle handed down from the early days.

In determining equities, the simplest basis is the acreage factor. This may be adopted in prospective or undeveloped fields. It must be modified in the case of a field which has been drilled to such a stage where variations due to sand thickness and other characteristics reveal differences in estimated reserves per acre. It is possible, however, with a knowledge of subsurface conditions, to determine with reasonable accuracy the reserves in place under developed leases. On this basis participation can generally be agreed upon for a unitized recycling program.

State and Federal Control

Up to the present time the initiative in unit agreement has come largely from the operators themselves. The states, although in authoritative opinions have the powers to effect field unitization, have generally restricted their activity to suggestion and cooperation with operators, and to enforcement of unit well spacing in oil fields. Organizations in the industry, particularly the Mid-Continent Oil and Gas Association, have promoted unit operation, supplying valuable information for use in guiding operators interested in such work. The federal Government's stand on the subject is clear. Although statutory control has not yet been delegated to this agency, it is definitely implied in the Cole bill,[1] shortly to come up for attention in the Congress.

The opportunity is ripe for state initiative in promoting unit operation, particularly regarding recycling projects. One of the major arguments for federal control at this time is the lack of power exercised by state governments in bringing about such reforms.[2] While the issue embraces oil and gas production generally, the relatively minor phase of field unitization for recycling programs stands out as an important opportunity for state agencies and operators to show their willingness to cooperate, and to assert their powers before they lose them on the grounds of indifference.

Well spacing and pooling of acreage into drilling units is clearly a state power based on conservation of petroleum resources. If this is true in oil fields, then the widening of that power to enforce field-wide unit operation and recycling in high-pressure gas-condensate pools may be inferred, where the same principle of conservation demands unitization of a greater magnitude.

The rights of operators to cooperate in one of the several types of unitization plans is fundamental. This approach to greater acceptance of unit operation, however, is dependent upon unanimous cooperation of all operators and royalty interests, entailing arduous legal work and almost endless conferences to set up a contract suitable to all interests. Despite the difficulties of this approach, it is being used successfully, and in one particular instance an outstanding recycling project is about to begin, with complete agreement of all participants imminent.

Pressure Maintenance Issue

Digressing from unitization, the state enforcement of pressure maintenance is granted by good authority[3] even where the gas produced is being utilized legally at the surface. The prevention of waste which demands return of gas to high-pressure reservoirs is the basis for this contention.

The economic position of the recycling phase of the industry further clarifies the state's opportunity for assuming control. The advantage lies in the fact that the issue of recycling economies is not clouded by market demand, which is a primary factor of disturbance in oil proration. Proration generally was induced by the weakness of oil economy resulting from an oversupply. While conservation, the real issue and basis of state power, is emergent at the present time, the exigency of controlling production and maintaining economic stability have in the past overshadowed it. The principle of conservation, if applied to all production, is sufficient in good opinion to correct the balance of supply and demand, although this solution is far from fulfillment.

Recycling, which to date accounts for a minor production of petroleum products, has no such economic problem, and can be approached solely on the principle of conservation. Thus it is in a position to play a leading part in the assertion of cooperative effort between operators and state agencies, and to set an example for wider adoption of 100 per cent conservation measures in the industry at large. This gives the unit recycling problem an importance beyond that inherent in its limited scope.

Federal Attitude

Engineering arguments in favor of unit recycling operation are clearly established. The legal arguments against unit operation, which are losing ground in the industry as a whole, exert even less weight with respect to this phase. Early opinions were cited that such radical ideas as unitization and pooling were monopolistic in character and might be judged in violation of federal antitrust laws. Federal opinion, however, has refuted this argument,[4] in citing that such production units are usually small, at best limited to individual fields, and that all interested landowners, operators and royalty holders are concerned in the unit operations. Further, unitization is held in federal opinion as the important factor in overcoming the evils of the rule of capture.

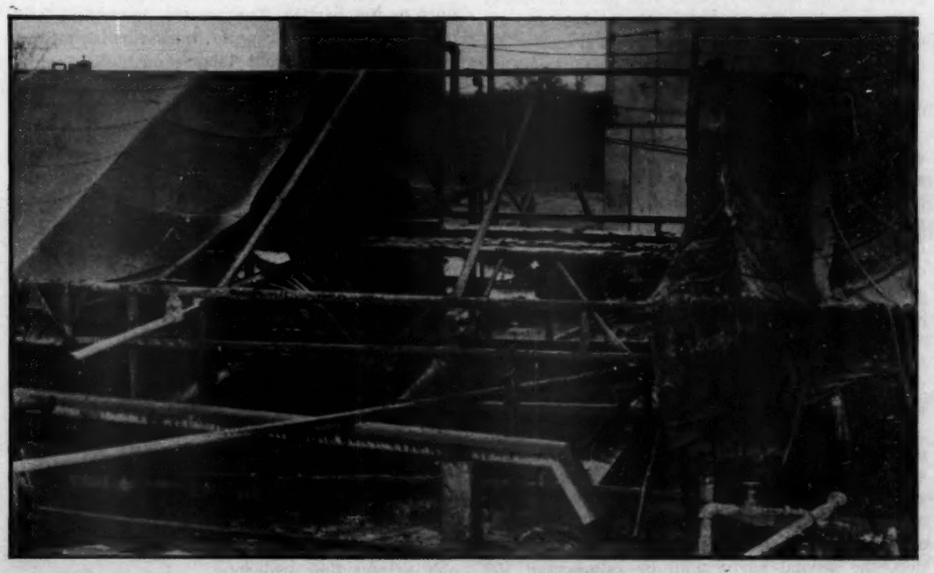
The federal Government alleges recognition of state power in enforcing unitization, based on the authority to protect the public interest against waste and to insure an equitable distribution among collective owners. Such powers are not judged as infringements of the constitutional rights of due process, equal protection of laws or loss of property without just compensation. Court decisions upholding compulsory unitization of city blocks on a small scale are inferred by federal opinion to constitute a precedent for extension of state powers for enforcement of unitization on a field-wide scale. These federal opinions on state rights provide an indication of the expected powers which the federal Government may assume on the basis of state negligence in assertion of such powers.

Unitization of Federal Lands

While federal statutes involving development of government-owned oil properties have not enforced unitization, they have actively encouraged it. The first step toward this end was the amendment in 1930 of the Mineral Leasing Act, reposing authority in the secretary of the interior to approve unit plans on a field-wide basis. An added inducement to the lessee was provided in extension of leases so unitized and approved, beyond the 20-year period prescribed in the act, to termination of the plan.

Upon expiration of the act by limitation, January 31, 1931, the Congress on March 4, 1931, enacted permanent legislation giving further encouragement to unitization of government-owned oil lands. The portions of this act applying to unit operations are set forth in a specimen form of unit agreement issued in January 1936.[5]

The specimen form, after citing enabling act



Spray for cooling drilling fluid on Union Producing Co.'s No. 1 Minnie Brown, Agua Dulce. Fluid circulated by small mud pump (not shown) on opposite side of mud pit

and regulations, begins with a description of the lands included in the unit area, and a statement of what constitutes unitized substances (oil, gas, natural gasoline, and associated fluid hydrocarbons in any and all sands or horizons within the unit area). The first party in the unit plan is designated as unit operator and provisions are made for naming a possible successor by a majority of interests of the second parties and approval of the secretary of the interior.

Exclusive, specified rights and privileges of all second parties are vested in the operator, for prospecting for, producing and disposing of the unitized substances, with the understanding that the operator has only the rights of possession and use of second-party lands permits or leases for the specified purposes of the unit agreement. The operator may be either a company or a person operating at own expense and profit or at expense and profit of all parties owning operating rights under the agreement. A statement is made in the agreement clearly explaining his relation to all interests.

Participation of parties in interest in the unitized area prior to discovery of oil may be arranged along mutually agreed lines, with arrangements for participation of the interests after discovery of oil. Upon discovery, the operator submits a plan for development of the unit area to the federal oil and gas supervisor. This plan shall include drilling obligations of the operator, shall provide for an adequate casing and well-spacing program and for complete exploration of all productive sands of the unit area for determination of the extent of the commercial production, affording suitable protection for all interests in the unit.

Retroactive Adjustment

When the oil discovery well is completed, the operator submits to the secretary of the interior a schedule of all lands within the unit area which are reasonably proved to be productive. On the basis of this schedule as accepted, the participation of all interests shall be drawn. The percentage acreage interest of each interest will determine the participation of that interest in costs and benefits of the unit operation. This preliminary schedule shall be revised from time to time to include lands reasonably regarded as having been commercially productive, or to exclude lands in the original schedule which are reasonably regarded to be nonproductive. The participation of all interests shall be based on the revised and approved schedules as development progresses. An important point in the participation ruling is that no land shall be excluded from the unit area because of depletion of the unitized substances.

When the extent of the field is determined, each participating area shall become fixed, and all accounts shall be adjusted with interest allowance at 4 per cent as though such fixed participating area had been in the participating area first constituted after completion of the discovery well. This retroactive adjustment may be replaced in some agreements by participation of areas according to the successive revisions of the schedule. Production is to be allocated to the participating interests on the basis of the acreage percentage which each interest bears to the total area.

Provision is made for second parties to drill on nonparticipating acreage, according to the spacing plan, unless the operator elects to drill such acreage after notification by second parties of intent to drill. In case such a well drilled by a second party at his expense results in production, the second party shall be reimbursed 150 per cent of the average drilling cost, and his acreage may be included in the participating area. If the operator drills the outside well, and its production is considered insufficient to be included in the unit, the second party may operate, be responsible for and produce the well at his expense and profit, paying the operator a fair salvage value for casing and other equipment left in the well.

All development and production of the unit must conform to best conservation methods. The unit plan continues in effect until a notice of nonproductivity, approved by the secretary of the interior, is given by the operator to each interested party, or the agreement may be terminated at any time by unanimous consent of all parties with the approval of the secretary.

Types of Unit Contracts

The administration of unit operation may follow a number of different forms. In oil-field unitization, the type of development falls into several classes,[9] illustrated by the following forms of unitization contracts: The committee form, the trustee form, the adjustment form, the Gypsy form, and the cooperative development form.

Since recycling requires highly centralized administration, in construction and operation of an extraction plant and pipe-line system serving the entire unit, the contract forms assigning rights to a common authority are of greatest interest.

The committee form features the choosing of an operator to whom are assigned all leases on a basis of value acceptable to all interests, and the reassignment of proportionate interests in the whole, to the contributing parties. Expenses and profits of the operation are proportionately distributed among parties, but any party may take his proportion of unitized substance in kind. An advisory committee consisting of one representative of each party with votes in proportion to each party's interest in the unit, shall elect, confer with and advise the operator, determine the drilling plan and extent of operations, pass on operator's advance estimates of costs and expenditures, appoint an auditor and pass on disposition of surplus materials and equipment by the operator. The rights of access to leases, and inspection of operations, well records and auditors' books are vested in each party to the unit agreement. Liabilities of the parties are several and not joint.

The trustee form of contract entails the same method of unitization of interests, with reassignment of proportionate undivided interest in the unit to the parties. The trustee, in drilling and operating the unit property, must furnish all material, equipment, and labor and defend suits against the property, but will be protected against personal liability. The drilling may be contracted, subject to approval of a majority of interests. Proportionate sharing in approved expenses and profits is provided in the same manner as in the committee form.

The adjustment form of contract provides for unitization of developed production, with assignment of values and proportionate interests before contracting, and provision for tentative evaluation of participating interests on an acreage basis, to be adjusted in light of subsequent development.

The cooperative development or agreement form allows individual development and operation of leases by the agreeing parties, along lines of a common plan which provides wider well spacing and prevention of waste and overproduction. This type of contract is designed for cases where complete unitizing is impossible. Its lack of centralization makes it generally unadaptable to recycling projects.

The success of pooling royalty interests in gas fields of the Appalachian area may be used as a guide in formulating plans for such pooling in recycling projects. Condensate, in place of gas production, would be the basis for paying royalties, with further provisions for royalty payments on gas after depletion of the liquid fraction.

With the diminishing reserves of shallow gas in the Appalachian area, operators were forced to seek new reserves in the deeper Oriskany sand horizon, encountered at depths ranging from 4,000 to 8,000 ft. The added costs of drilling these deeper wells necessitated a development plan which would allow wider spacing of wells at the same time providing for equitable treatment of property and royalty owners. Unit operation was the solution to the problem.

The Belmont Quadrangle Drilling Co. initiated unit operation in the area in 1930, based on information from similar projects in the Van pool of Texas and Kettleman Hills in California. This type of operation was adopted widely by the Peoples Natural Gas Co. with outstanding success. Although unit operation in the fields concerned only leases owned by a single operator, restricting the work to royalty pooling, the plan is equally adaptable to leases owned by several operators on a field-wide scale.

An advantage to unitization is gained in the eastern district by making detailed geological studies of prospective fields before they are drilled. The probable shape and size of the field, and the portion of company leases included within the tentative borders, provides a basis for the first pooled unit schedule. That schedule lists all company leases located completely or partially in the pooled area, with the portion of that acreage "in pool." The lessors listed in the schedule are then approached by company representatives, the unit operation plan is explained, the idea sold and the unit-operation agreement secured.

Major Changes Embraced

The new agreement embraces some major changes in the original lease. Lease rentals are modified to $1 per acre per year, and where rentals are originally lower the lessor is guaranteed a minimum royalty income of $1 per acre per year for all "in pool" acreage throughout the life of the unit-operation agreement. Lease terms are extended 10 years beyond the former expiration dates, and royalty payments are modified to 1½ cents per 1,000 cu. ft. of gas marketed from the pooled area. Under the terms of the agreement the operator is allowed to follow a well-spacing program which will best conserve the gas reserves and protect the interest of all parties to the agreement.

When added information regarding the extent of the field has been gained through development, the company acts as an impartial referee in determining new acreage to be added to the pool, or nonproductive acreage to be excluded. Since royalty payments are made solely on the amount of gas produced, the company has no financial interest in variation of the size of the pool. Royalty is shared by lessors in the proportion that their acreage in the pool is to the total pooled acreage.

The release which this agreement gives the operator from close spacing and competitive drilling allows the savings of pooled operations to be shared by operator and royalty holder alike. Payments in such pooled units have been higher than any in the district. Satisfaction of lessors under the unit plan has been almost unanimous, in contrast to expectations of early critics. The friendly relations among all parties to the agreements have arisen from the knowledge that all were sharing equally in the benefits of efficient development and operation of gas leases.

To repeat, the technique of recycling is now sufficient to plan future projects for long-term operation and maximum recovery of condensate.

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At this point the fundamental requirement for successful recycling projects is inescapably unitization. Unit operation is coming to the oil industry at large probably sooner in the recycling phase. Whether it is to be voluntary or compulsory depends upon the attitude of operators and state agencies, and on the degrees of education among landowners and royalty holders, of the benefits deriving from its application. Over 500 gas-condensate fields of divided lease ownership already challenge this principle, and deeper drilling in the future will add increasingly to the need for recycling measures, predicated on unit operation.

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HIGH-PRESSURE FIELD

(Continued from Page 32)

pressures, the operators are prewarned in sufficient time to take any extra necessary precautions to forestall any trouble. Depths of the gas indications are recorded continuously through a calibration of the instruments with the volume and rate of mud circulation from the bottom of the hole.

Along with this mud-analysis work, maintenance of adequately conditioned drilling mud has received vigilant attention. Crews are required to record in writing at a specified time each hour the exact condition of the mud, including weight, viscosity, and percentage of solids, as well as what corrective measures are taken to bring the mud to specifications, if necessary. Crews are held responsible for maintenance of the condition of the mud.

The orderly development of the field has been extended to rig moves. Locations for the most part have been drilled according to a predetermined schedule and in order to minimize the distance of moves. Although in early development two contract rigs—one for Transwestern Oil Co. and the other for Barnsdall Oil Co.—were operated, the only rig now working is a Barnsdall rig. With this, drilling schedules and moves have been so systematized that well time has been reduced to 12 days. In this schedule rigs are moved and set up on a new location and conductor pipe set and cemented within 24 hours after completion of the preceding well. The rig is so designed and unitized that a minimum of breaking down is necessary. Layouts are standardized; and with piping assembled in coupled sections, setting up is simplified. The derrick and substructure, with rotary in place and the draw works on the derrick floor, are skidded as a single unit. Not even the traveling block is taken down. Exception to the schedule has been made in the latest well, whose location as a relief well on the brink of the crater well occasioned a special assembly of equipment.

The field has been produced to obtain the maximum utilization and conservation of reservoir energy. As yet there is not a pumping well in the field. Several extreme edge wells have been completed and produced by jetting, but otherwise all wells have flowed continuously, although the field is now 2½ years old. Bottom-hole pressure has been maintained with fair uniformity around 1,800 lb., a minimum drop being recorded with slow and uniform withdrawals. By completion of wells with casing cemented below the gas-oil contact, gas-oil ratios have been held below 400 ft. per barrel. A limited number of wells are making small percentages of water, although it is possible the water is not from the bottom. Oil is approximately 21 gravity and is of the Mirando type, desirable especially for its lubricating-oil stock and gas-oil value.

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Progress in METALS

By W. L. NELSON

Gas Cutting Machine Useful in Refinery

The use of gas cutting machines in the fabrication of steel plate into equipment such as shells, vessels, boxes, heat exchangers, etc., has attracted particular attention during the last 2 years. Gas cutting machines were first applied to large-scale operations which involved the cutting of a large number of pieces of a similar or identical shape. However, with constant commercial use, the machines have been simplified to meet small-scale and intermittent operations, as well as to develop in the other direction into complicated large-scale machines which can automatically duplicate almost any pattern. The small intermittent-type

Courtesy Air Reduction Sales Co.

Tube sheets, flame-cut from steel plate. The shell was rolled from plate and beveled with a flame-beveling machine

machine is usually portable and confined in its operations to cutting along straight lines, circles, the circumference of a cylinder, or the beveling of edges. The larger, more elaborate equipment appears to have no limit to the scope of its possible operations but is usually stationary.

The advantages of machine cutting are almost too obvious to mention. By machine cutting, the precision of the cut is greatly improved over hand cutting, both because the machine holds the torch at exactly the right position and because it advances the position of the torch at a uniform rate. The outcome of this vital advantage is a precision that cannot be duplicated by hand operations and a saving in fuel (and oxygen) because the torch is neither too hot nor too cold. The increase in precision reveals a vast number of small-scale shop operations that could not heretofore be approached by means of flame cutting.

As an illustration of the general usefulness of machine gas cutting in the refinery, a picture of the product of such an operation is shown on this page. The gas cutting machine was used to cut the heat-exchanger tube-sheets and to bevel the ends of a heat-exchanger shell. Light-weight steel sheet was laid over the longitudinal welded seam of the exchanger shell while the end was being beveled, to keep the machine from going out of alignment as it passed over the rough seam.

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Lo the Poor Pipe Wrench

Most of us fail to note the grueling service which is demanded of pipe line wrenches. The teeth of the grips must be hard to resist wear and to grip the pipe without slipping. The shank of the movable head or jaw must be exceedingly strong because it is subjected to a concentration of both bending and tension stresses.

The Trimo Manufacturing Co. and the Climax Molybdenum Co. have cooperated in the development of alloy steels for the pipe wrench parts that are mentioned above. The fixed jaw consists of an insert with teeth on it and this piece is forged from S.A.E. 4150 steel which contains 0.5 per cent carbon, about 1 per cent of chromium, and 0.2 per cent molybdenum. The insert is first forged, annealed at 1,500° F., and finish machined and ground. It is then normalized at 1,600° F., and quenched from 1,500° F. and drawn (or tempered) back to 400° F. This treatment produces a material having a tensile strength of 300,000 lb. per sq. in. with a hardness of about 60 Rockwell (about 625 Brinell).

The treatment of the movable jaw is more complicated because it has two distinct parts—the jaw teeth and the shank by which the size of the wrench is adjusted. The piece is forged, annealed at 1,500° F. and machined. It is then normalized at 1,600° F. to homogenize the microstructure, quenched from 1,500° F. in oil and drawn to 1,100° F. This results in the following properties:

Tensile strength, lb. per sq. in.	170,000
Yield point, lb. per sq. in.	150,000
Elongation in 2 in., per cent	18
Red. of area, per cent	55
Izod impact, ft./lb.	50
Brinell	320

The head or jaw is then further heat treated in the same way as enumerated above for the insert or fixed jaw. Thus the jaws proper are extremely hard and

Courtesy Trimont Manufacturing Co.

Pipe wrench supports truck and two men

strong, and the shank has the exceedingly tough properties indicated in the above tabulation.

The great strength of such a wrench is indicated in the accompanying photograph. It shows a wrench which is gripping a pipe, and on the handle of the wrench is carried a truck with two men in it making a total load of 4,000 lb.

Wheels in pipe cutters are also made of S.A.E. 4150 steel and they are heat treated in a manner similar to the treatment outlined above for pipe wrench jaws.

—The Moly Matrix, May 1939.

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Metallurgical Terms

Semifinished Steel

Among the special names for bulk steel in a semifinished state are billets, blooms, skelp, and slabs. A "billet" is a semifinished rolled ingot having a rectangular cross section. The term is generally used in referring to blocks whose cross section ranges from 4 to 36 sq. in. but having a width that is less than twice the thickness. Smaller pieces are called "bars" or "small billets." Larger pieces are usually called "blooms."

Thinner pieces are called slabs or skelp. A "slab" may be considered as a very thick semifinished plate and it is used as a base stock which will be rolled down into plates. "Skelp" is a plate of steel or wrought iron from which pipe or tubing is made. This is accomplished by rolling the skelp longitudinally into a circular shape and then welding or riveting the edges together.

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Impact at Temperature of Liquid Hydrogen

The following table, showing impact strengths of a number of special steels at a low temperature, was taken from "Impact Strength of Metallic Materials at Low Temperatures, Down to Temperature of Liquid Hydrogen," by Haupt and Kirsch, in the German magazine, Naturwiss., Vol. 26, June 17, 1938.

APPROXIMATE CHEMICAL COMPOSITION, PER CENT

Material—	Carbon	Manganese	Chromium	Nickel	Molybdenum	Others	Charpy impact —Kg/Cm² at 68° F.	Charpy impact —Kg/Cm² minus 423° F.
Nickel	..	...	...	99.0	..	.....	32.0	22.0
Manganese, chromium molybdenum steel	.11	17.7	9.9	...	1.0	.....	33.0	22.0
Manganese, chromium nickel steel	.13	15.5	14.2	1.1	0.1	.....	29.0	22.0
18-8 chromium nickel steel	.11	(1.0W)	17.7	8.5	0.2	{ 0.2 Ti { 0.2 Cu	24.0	20.0
18-8 chromium nickel steel	.10	...	18.0	8.1	03.	0.3 Ti	26.5	14.5
36 nickel steel	.04	...	...	36.0	..	.....	21.5	13.0
Copper	(99.96% copper)			...	..	.....	10.0	13.0
25-5 chromium nickel steel	.24	...	25.0	24.4	..	.....	15.0	10.5
Manganese, chromium steel	.09	9.4	16.9	...	..	.....	20.5	8.0
Silicon manganese chromium steel	.08	17.2	7.7	0.1	..	3.2 Si	16.5	4.0
Lead	(Commercial)			...	..	.....	2.0	4.0
Low alloy steel	.41	...	1.7	...	0.4	0.25 V	15.0	2.0

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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Determining Price For Gas Under New Casinghead Gas Contract

What basis is usually used for arriving at "price per gallon" in the new casing-head gas contract? What atmospheric pressure is used? What is the method for arriving at "assumed flowing temperature"? What would be the minimum gasoline content for gas required for profitable operation of a 3,000-gal. plant?—C. L. H.

The usual method of setting a price for casinghead gas is by agreement between the contracting parties based upon the market quotations for natural gasoline, which is averaged over a period, such as quarterly, for a specified area, say North Texas. When making use of the table in Paragraph 4 of the contract, the calculation is made as follows:

Price for delivered gas—multiply gasoline content per 1,000 cu. ft. by the sale price per gallon of gasoline, then multiply by the applicable per cent. Example—gasoline content of a gas is 2 gal. per 1,000 cu. ft.; sales price 2 cents per gallon; the per cent is 16.25, obtained from the table. Then $2 \times .02 \times 16.25 = .65$ or 65/100 cent per 1,000 cu. ft.

When correcting for pressure it is the practice to use 4 oz. above the average atmospheric pressure for the region involved. This pressure for Oklahoma is 14.4 lb. per sq. in. and in the Texas Panhandle it is 13.2 lb.

Formerly it was the custom to obtain the flowing temperature of the gas from the average of a number of observations in the same area, but since the result was always so close to 60° F., this has been accepted as standard for use in these contracts. In some sections, 70° is the assumed temperature; the Gulf Coast is an example.

There is no fixed rule for determining the minimum gasoline content of a gas, or volume, for the profitable operation of an extraction plant. Type of plant, operating efficiency, overhead and marketing conditions are among the important variables that influence the profit and loss account.

Composition of Water in Wells and Normal Salty Surface Waters

Is it a fact that the salt water found in oil formations is of much higher concentration than any of the salty waters on the earth's surface? Do geologists trace oil by the salt content of deep waters?—N. M. C.

The salt water found in oil formations, connate water, is frequently of very high concentration, sodium chloride predominating, approaching saturation. At the boiling point water will dissolve 390,000 parts of sodium chloride per million and 357,000 parts in water at the freezing point. F. W. Clark and Dorsey Hager report salt concentrations of several connate waters and the composition of ocean and inland lakes of high salinity.

The range of concentrations for oil structure waters appears to be from 20,000 to 340,000 parts per million (p.p.m.), whereas ocean waters vary from 25,000 to 36,000 p.p.m. The salinity of Great Salt Lake is 230,000 p.p.m.; the Dead Sea and the Rjver Jordan as high as 250,000 p.p.m.; the Red Lake, Perekop, Crimea 300,000 p.p.m., and the Katwee Salt Lake, Central Africa, 310,000. These analytical results indicate that the fossil sea waters contain more salt, up to 34 per cent, than any known surface waters.

Connate waters may have resulted from trapped sea water, a deep bay almost cut off from oceanic circulation, where outflow is small but large volumes of ocean water can enter to offset evaporation. As the upper layers become denser they must sink to produce a saline concentration at the bottom and finally deposition of salt follows. Another suggestion is that a large body of water is cut by a change in land level. The water gradually evaporates and at last deposits its saline load.

Mr. Hager has proposed that differences in salt content may be used to find structural traps. In the Permian basin of Texas, the concentrations in the top folds as low, at 20,000 p.p.m., and in the basin as high as 340,000 p.p.m. Decreasing salinity towards a central area surrounded by dry holes might point to a large anticline.

Rerefences: Dorsey Hager, Practical Geology (1st edition), p. 301. F. W. Clark, Data of Geochemistry.

Properties of Benzol and Price For Extensive Motor-Fuel Use

What is the particular nature of benzol that makes it suitable for use as motor fuel? Is it any better than gasoline for this purpose?—O. N. M.

Benzol is the common or trade name for the chemical substance benzene. The pure substance boils at 176° F., whereas the commercial benzol distills 90 per cent between 176° and 212°. The freezing point is 10° above the freezing point of water, or 42° F. Its heating value is 18,000 B.t.u.

The crude benzol is made as a byproduct of the coke oven at gas plants and steel mills and also is made at coal-tar distilling plants. The quantity of benzol obtained from coal is not large, the tar yielding only 2 to 5 per cent, and 50 carloads of coal furnishes only approximately 700 bbl. The entire output of benzol for a year is less than 1 per cent of the volume of gasoline consumed for motor fuel.

Benzol may be better than gasoline in a few respects. The mileage obtained is on the order of 10 per cent higher, there is less tendency to preignite, and its antiknock rating is 100 octane number. It produces more carbon when burned and has a heating value of over 2,000 B.t.u., less than the average good-quality gasoline.

The market price of benzol is usually very close to the retail price of gasoline. It is seldom mixed with gasoline in larger quantities than 20 per cent, which makes a product of 60-65 octane number. There is no close inspection made of benzol comparable to that applied to gasoline, so its impurities, especially sulfur and gum, may contaminate the resulting blend when it is used.

Physical and Chemical Laws and Principles Used in the Petroleum Industry

MOLECULAR VOLUME FROM ATOMIC VOLUME AND COVOLUME

The molecular volume, $\frac{\text{mol. wt.}}{\text{density}}$ or $\frac{M}{d}$, is composed of an additive part, sum of atomic volumes, and a covolume. The value of covolume is $24.5\ (1 + \alpha t)$ cc., α being the same as the coefficient of expansion for gases (°C. = 1/273). The atomic volumes at 15° C. are: CH_2 16.1, C 9.9, H 3.1, O (intra) 5.5, O (extra) 2.3, S (sulfhydryl) 15.5, Br. 17.7, N (primary amines) 1.5, N (five) 10.7, N (nitro) 8.5 to 10.7. Deduct for ring formation, double and treble linkings as follows: Hexamethylene ring —8.1, double bond —1.7, treble —3.4, benzene ring —13.2. Molecular volume may be obtained by adding atomic volume and covolume.

Prices Paid For Gasoline in the Capital Cities of the World

We are interested to know how the consumer's prices of gasoline vary in the most important countries of the world, so will appreciate any information you may have about them.—F. O. A.

The price paid for gasoline in different countries is shown in the table according to the records of about January 10, 1939, in the capital city of each country.

RETAIL PRICES OF GASOLINE IN WORLD CAPITALS

(In U. S. cents per gallon, including all taxes and duties)

Antwerp, Belgium	$0.350
Athens, Greece	0.315
Belgrade, Yugoslavia	0.336
Berlin, Germany	0.596
Bombay, India	0.302
Budapest, Hungary	0.350
Buenos Aires, Argentina	0.199
Cairo, Egypt	0.287
Capetown, Union of South Africa	0.309
Copenhagen, Denmark	0.244
Dublin, Ireland	0.310
Havana, Cuba	0.300
Hong Kong, China	0.265
Istanbul, Turkey	0.453
Jerusalem, Palestine	0.363
Lisbon, Portugal	0.417
London, England	0.309
Melbourne, Australia	0.283
Oslo, Norway	0.274
Paris, France	0.300
Prague, Czechoslovakia	0.416
Rio de Janeiro, Brazil	0.250
Rome, Italy	0.810
Santiago, Chile	0.326
Shanghai, China	0.233
Stockholm, Sweden	0.250
Tokyo, Japan	0.196
Warsaw, Poland	0.400
United States (average)	0.1876

It appears that Berlin and Rome were the most expensive places among the world's capitals to purchase gasoline last January.

Reference: Petroleum Facts and Figures from U. S. Bureau of Mines.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired, postage should be included.

FIELD OPERATIONS

Summarizing the Week's Developments

NEBRASKA—Nebraska joined the oil-producing states the past week when Hunton lime was found productive at a wildcat near Falls City, Richardson County, extreme southeastern corner of the state. It is the first oil strike in the Forest City basin.

KANSAS—The Westhusin pool in Rooks County was extended ¼ mile southwestward and an outpost ½ mile southeast of production had an oil showing in Lansing lime. A northern Barton County wildcat found oil in Lansing lime, but was drilling ahead toward Arbuckle lime. Extensions for two other Barton County pools were indicated by showings in outpost tests.

OKLAHOMA—The Canyon-lime zone in the Frederick field, Tillman County, was extended ½ mile and a new producing horizon in Arbuckle lime was uncovered. Two 3,300-bbl. producers were completed at Cement, Caddo County, and the Ramsey pool, Payne County, yielded a 5,610-bbl. well. The third producer in the shallow Hobart field, Kiowa County, flowed 140 bbl. in 4 hours.

TEXAS—The Tertiary Wilcox pay may extend into Bee County, in Southwest Texas, and tests were being made in that formation in a well ½ mile west of the West Tuleta field. Location was made for a Wilcox test in Gonzales County. A wet-gas-producing sand was uncovered in the Cologne field in Victoria County on the Texas Gulf Coast. A 2½-mile outpost to the Cotton Lake pool in Victoria County is producing at the rate of 150 bbl. per day. A new producing horizon at 9,752-86 ft. was opened in Old Ocean field. A link was added to the chain of wells between the Hull-Silk and Sikes pools in Archer County. A 1,700-bbl. well was completed in the Rogers & Rogers pool in Montague County. A gas well in the Grapeland area in Houston County, eastern Texas, produced 93,000,000 cu. ft. per day on various chokes. A ½-mile outpost to the Apco pool (Lower Ordovician) in Pecos County missed that pay formation and may be a failure.

LA-ARK-TEX—The deep test in the Lisbon, La., field was showing oil and gas condensate in the lower Marine formation. A wildcat north of Vivian, Caddo Parish, and 2 miles northwest of the Caddo field, filled a 500-bbl. tank with Woodbine-sand oil in 8½ hours on open flow. Extensions to the Texas end of the Rodessa field and the Joaquin gas field in Shelby County, Texas, were recorded. The Magnolia field in Arkansas was cut off on the north by a dry hole. The Tinsley field in Mississippi had no new completions and the field produced an average of 785 bbl. last week. The Barataria prospect in Jefferson Parish, Louisiana, was added to the list of South Louisiana pools.

MICHIGAN—Thirteen oil wells were completed during the week and 45 permits to drill were issued. This year will be the most active since oil was discovered in the state.

ILLINOIS—Deepening of 12 Benoist-sand wells to the Aux Vases sand in the Salem pool resulted in 15,092 bbl. of new potential production. Sixty-one new oil wells were completed, the largest of which was a well in the Salem field rated at 3,304 bbl. a day.

CALIFORNIA—A 3,342-bbl. well was completed in the Strand field, Kern County, extending production one location west.

Completions in All Fields

(Week Ended November 4, 1939)

	Oil	Gas	Dry	Total	1939 total comp. to date	1938 total comp. to date
N. Y., Pa., and W. Va.	42	17	9	68	2,736	3,049
Ohio	9	10	4	23	854	829
Indiana	8	0	4	12	279	101
Kentucky	3	19	7	29	597	762
Illinois	61	0	11	72	3,041	1,571
Michigan	13	1	12	26	1,216	788
Kansas	12	3	6	21	1,101	1,383
Oklahoma	16	1	19	36	1,479	1,461
Texas:						
North Central Texas	33	4	16	53	2,022	2,675
West Texas	29	0	6	35	1,591	1,683
Texas Panhandle	12	2	0	14	356	488
East Texas	5	0	0	5	349	1,565
East Central Texas	1	3	1	5	233	302
East Texas Border	1	1	0	2	61	118
Gulf Coast Texas	22	0	6	28	1,124	1,129
Southwest Texas	30	1	11	42	1,896	1,836
Total Texas	133	11	40	184	7,632	9,796
North Louisiana	8	0	2	10	440	546
Gulf Coast Louisiana	12	0	3	15	567	412
Total Louisiana	20	0	5	25	1,007	958
Arkansas	0	0	2	2	216	208
Montana	0	0	0	0	135	93
Wyoming	1	0	0	1	110	135
Colorado	0	0	0	0	13	11
New Mexico	13	0	1	14	500	478
Utah	0	0	0	0	0	2
California	13	0	2	15	788	1,098
Total United States	344	62	122	528	21,704	22,723
Total previous week	395	41	109	545		
Week ended Nov. 5, 1938	383	39	117	539		

Outstanding Fields—Highlights

(Week Ended November 4, 1939)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	32	41	4	2,400	1,163	25,496
Wasson-Bennett	18	75	11	13,250	494	23,596
Ector County	12	57	7	8,277	1,902	46,143
Pecos County	8	24	2	661	1,207	30,798
Jones County	5	9	2	457	579	7,000
East Texas	13	12	5	307	26,116	396,092
OKLAHOMA						
St. Louis	4	26	5	737	899	31,150
KANSAS						
Barton County	4	17	1	315	494	12,375
Ellis County	2	17	3	1,356	442	11,815
Rice County	6	23	2	387	1,379	30,675
Russell County	5	24	2	542	1,342	25,495
NEW MEXICO						
Lea County	15	52	5	2,333	2,283	102,000
Eddy County	17	59	7	3,720	447	11,230
LA-ARK-TEX						
Magnolia, Ark.	2	9	0	0	71	16,685
Cotton Valley, La. (deep)	1	6	1	720	146	9,975
MICHIGAN						
Freeman-Redding	4	15	1	236	123	14,071
Kent County	8	40	4	996	187	10,274
CALIFORNIA						
Wilmington	3	15	5	2,292	729	82,900
ILLINOIS						
Salem	8	88	16	4,086	1,390	179,140
Louden	11	92	18	7,239	1,163	65,075
Other basin fields	30	270	29	3,633	1,819	72,485
Old fields	....	.....	....	.....	.....	9,880

Illinois, Indiana and Kentucky

By STAFF CORRESPONDENT

Deepening Old Salem Wells Adds to the Field's Potential

MATTOON, Ill., Nov. 6.—Illinois production fell off again last week, the average daily output for the week having been 326,580 bbl. per day. In the previous week it had been 338,755 bbl. and in the week ending October 21, 325,266 bbl. The Salem field was credited with 179,140 bbl. last week; Louden 65,075 bbl.; other basin fields, 72,485 bbl. and the old fields of the state, 9,880 bbl. The peak in Illinois production came in the week ending September 30 when the average was 344,267 bbl. per day. Production dropped in the following week to an average of 332,115 bbl. then to 330,100 bbl. and 325,266 bbl. In the week ending October 28 it increased to 338,755 bbl. only to drop again last week 12,175 bbl. per day.

This week's report from the Salem field includes the deepening of 12 Texas Co. Benoist-sand producing wells to the Aux Vases sand which lies next below the Benoist and the excellent results the company got from the deepening operations. The dozen wells producing from Aux Vases showed a potential 24-hour initial production averaging 1,250 bbl. per well, ranging from 357 bbl. up to 3,052 bbl. As these wells had already been carried as completions in the Benoist sand they are not included in last week's completions in Salem, which numbered 16 new wells with a total initial production of 4,086 bbl., most of the Texas Co. completions having been gaged only 3 hours on their initial day. The Louden field had 18 new wells with 7,239 bbl. initial output, and Wabash County 13 wells with 1,531 bbl. initial production. Other counties and their record of the week included Richland, 3 wells, 252 bbl.; Clay, 1 well, 422 bbl.; White, 5 wells, 778 bbl.; Jefferson, 2 wells, 387 bbl.; Wayne, 1 well, 60 bbl.; Edwards, 1 well, 76 bbl.; Washington, 1 well, 127 bbl.; a total of 61 new oil wells. There were 11 dry holes, including 1 each in Bond, Franklin, Marion, St. Clair, Clinton, Jefferson, Wayne, Perry and Franklin and 2 in Wabash.

Henry L. Kellogg, state planning engineer, said last week the Illinois Geological Survey estimates that 100,000,000 cu. ft. of gas was wasted in the Salem field in the latter days of September when production in that field was 200,074 bbl. per day. It had dropped to 179,140 bbl. since that time. Dr. N. N. Leighton, head of the Geological Survey, in a letter, commented as follows:

"Inasmuch as the daily production of oil from the pool has declined somewhat since September 22 it is probable that the gas output has declined also, but surely not below 90,000,000 cu. ft. daily. The amount of gas returned to the sand for pressure maintenance is reported to be approximately 1,250,000 cu. ft. per day, an insignificant amount in proportion to the total output."

Completed Wells

Following is the record of well completions last week, the initial production representing 24 hours unless otherwise stated:

Fayette County

In the Louden field in Fayette County, Carter Oil Co.'s No. 1 Tirrey-Cummings, SW SE NW Section 32-8n-3e, total depth 1,580 ft., shot with 60 qt. and 20 qt., flowed 930 bbl. Carter's No. 12 Ireland, SW SE NE Section 32-8n-3e, total depth 1,580 ft., shot with 80 qt., flowed 786 bbl. Carter's No. 7 L. Cummings, NE NW SW Section 32-8n-3e, shot with 40 qt. at 1,560-74 ft., Bethel sand, flowed 816 bbl. Carter's No. 5 K. Owen, NW NE SW Section 29-8n-3e, total depth 1,503 ft., shot with 10 qt., swabbed 56 bbl. Carter's No. 4 K. Owen, SW NE SW Section 29-8n-3e, total depth 1,504 ft., shot with 20 qt., swabbed 100 bbl. Carter's No. 6 Robert Fair, NE SW SW Section 29-8n-3e, total depth 1,556 ft., shot with 20 qt., swabbed 169 bbl. Carter's No. 4 Dunaway, NE NE NE Section 29-8n-3e, total depth 1,502 ft., shot with 80 qt., flowed 714 bbl. Carter's No. 2 O. Miller, NW SW NW Section 28-8n-3e, total depth 1,547 ft., shot with 30 qt. and acidized with 1,000 gal. and then shot with 10 qt., flowed 258 bbl. Carter's No. 7 Mabel Mills, NE SE SW Section 28-8n-3e, total depth 1,587 ft., plugged back to 1,517 ft. and shot with 80 qt., flowed 162 bbl. from Cypress sand at 1,448-1,522 ft. There was no Bethel sand in this well. Carter's No. 2 J. Rhodes, SE NE NW Section 23-8n-3e, total depth 1,515 ft., shot with 20 qt. at 1,475-81 ft., swabbed 200 bbl. Carter's No. 1 C. McCollum, SE NE SW Section 2-8n-3e, total depth 1,585 ft., shot with 30 qt. and 10 qt., swabbed 528 bbl. Carter's No. 8 Tom Wright, NW SE SE Section 20-8n-3e, total depth 1,573 ft., shot with 20 qt., and acidized with 1,000 gal. and then shot with 20 qt. at 1,477-83 ft., flowed 486 bbl.

In the south end of the Louden field, Carter Oil Co.'s No. 2 E. Owens, NE SW SW Section 8-7n-3e, total depth 1,571 ft., shot with 15 qt. and 20 qt., swabbed 150 bbl. Carter's No. 4 John Williams, SW NE SE Section 7-7n-3e, shot with 40 qt. at 1,564-77 ft., and with 10 qt. at 1,553-56 ft., swabbed and flowed 556 bbl. Bethel sand lay at 1,502-41 ft. Carter's No. 7 Helen Welker, SE SW SE Section 7-7n-3e, total depth 1,574 ft., shot with 10 qt., acidized with 1,000 gal. and then shot with 40 qt. and with 30 qt., swabbed 416 bbl. Jarvis Brothers' No. 13 Yakey, C W½ W½ SE Section 6-7n-3e, total depth 1,483 ft., shot with 40 qt., pumped 100 bbl. Carter's No. 12 Hobbs, SW NW NE Section 6-7n-3e, total depth 1,582 ft., shot with 40 qt. and 20 qt. at 1,479-98 ft., swabbed and flowed 376 bbl. Carter's No. 10 I. Hobbs, NE SW NE Section 6-7n-3e, total depth 1,529 ft., shot with 20 qt. and 20 qt., swabbed and flowed 436 bbl.

In Bond County Boren & Burroughs' No. 1 Jett, NW NE NW Section 30-8n-3w, was dry and abandoned at 910 ft.

In Richland County Pure Oil Co.'s No. 3 Southgate, NE SW NE Section 23-4n-9e, total depth 3,030 ft., plugged back to 2,681 ft. and then to 2,630 ft., and completed in Weller sands at 2,571-88 ft., 2,618-21 ft., and 2,626-34 ft., pumped 68 bbl. per day after a 25-qt. shot at 2,581-85 ft. Pure's No. 1 Cook, SW NW SW Section 24-4n-9e, shot in Cypress sand at 2,593-97 ft. with 20 qt., pumped 63 bbl. a day. Pure's No. 1 E. Taylor B, SE NE SE Section 14-4n-9e, acidized with 1,000 gal. at 2,947-52 ft., pumped 121 bbl.

Marion County

In the Salem pool in Marion County, Texas Co.'s No. 15 Easley, NW SW NE Section 33-2n-2e, McClosky pays at intervals from 2,025 ft. to 2,074 ft., flowed 126 bbl. Texas Co.'s No. 4 Lazaretti, C E½ SW SW Section 33-2n-2e, McClosky lime at 2,112-41 ft., flowed 50 bbl. in 3 hours, rated at 350 bbl. a day. Texas' No. 2 C. Lee, NW SW SE Secion 33-2n-2e, Benoist sand at 1,840-66 ft., flowed 37 bbl. in 3 hours, rated at 259 bbl. a day. Texas' No. 7 S. McCoy, SE NE NW Section 33-2n-2e, McClosky lime at 2,005-18 ft., flowed 43 bbl. in 3 hours, rated at 300 bbl. a day. Texas' No. 16 W. Frederich A, NE SE NE Section 30-2n-2e, Benoist sand at 1,860-74 ft., pumped 469 bbl. in 24 hours. Texas' No. 5 L. Maxwell B, NW NE SE Section 30-2n-2e, Aux Vases sand at 1,845-67 ft., Benoist at 1,828-45 ft., flowed 315 bbl. in 24 hours. Shell Oil Co., Inc.'s No. 5-B Farthing, SW SW NE Section 32-2n-2e, shot with 15 qt. in Aux Vases sand at 1,841-51 ft., flowed 385 bbl. a day. Texas Co.'s No. 13 Friesner, NE NE NW Section 32-2n-2e, McClosky lime pay at 1,878-84 ft. and 1,935-53 ft., flowed 56 bbl. in 3 hours, rated at 406 bbl. a day. Texas' No. 19 A. McCollum, NW NW NE Section 32-2n-2e, McClosky lime at 1,900-15 ft. and 1,937-42 ft., flowed 48 bbl. in 3 hours, rated at 336 bbl. a day. Ohio Oil Co.'s No. 26 C. E. Lloyd, NW NW NE Section 33-2n-2e, Benoist sand at 1,782-1,816 ft., flowed 324 bbl. a day. Jones' No. 1 D. Hester, SW cor. SE NE NE Section 21-2n-2e, McClosky at 2,001-12 ft., acidized with 450 gal. and 1,000 gal., pumped 60 bbl. of oil and 12 bbl. of water per day. Magnolia Petroleum Co.'s No. 24 S. Shanafelt, SW SW SE Section 29-2n-2e, McClosky lime pays at intervals from 1,929 ft. to 1,995 ft., acidized with 3,000 gal., flowed 888 bbl. per day.

Texas Co.'s No. 8 M. Williams, C SW NW SW Section 32-2n-2e, an old well deepened from 1,718 ft. to Aux Vases sand at 1,718-65 ft., flowed 198 bbl. in 3 hours, rated at 1,386 bbl. per day. Texas' No. 8 W. Frederich, SW NW SW Section 29-2n-2e, deepened from 1,777 ft. to Aux Vases sand at 1,801-52 ft., shot with 85 qt. at 1,757-1,842 ft., flowed 210 bbl. in 3 hours, rated at 1,491 bbl. per day. Texas' No. 3 A. McCollum, NW SE SE Section 29-2n-2e, deepened from 1,780 ft. to Aux Vases at 1,789-1,868 ft., and shot with 22 qt. at 1,755-77 ft. and with 68 qt. at 1,789-1,857 ft., flowed an estimated 1,000 bbl. in 24 hours. Texas Co.'s No. 2 D. Young, SW cor. NW¼ Section 21-2n-2e, deepened from 1,825 ft. to Aux Vases at 1,834-75 ft., shot with 20 qt. on bottom, flowed an estimated 750 bbl. in 24 hours. Texas' No. 5 Kay Wayman, 1,650 ft. from south and 330 ft. from east lines of NE¼ Section 31-2n-2e (a corrected location), shot with 100 qt. at 1,678-1,778 ft., Benoist and Aux Vases sands, flowed 472 bbl. in 3 hours, rated at 3,304 bbl. per day. Texas' No. 4 K. Wayman, 1,650 ft. from south and 990 ft. from west lines of NE¼ Section 31-2n-2e (corrected location), Benoist sand top 1,702 ft., Aux Vases 1,775-1,825 ft., top of Ste. Genevieve lime 1,825 ft., shot with 85 qt. at 1,725-1,810 ft., flowed 182 bbl. in 3 hours, rated at 1,275 bbl. a day. Texas Co.'s No. 6 K. Wayman, C NE NE NE Section 31-2n-2e, deepened from 1,732 ft. to Aux Vases sand at 1,742-1,802 ft., shot with 90 qt. at 1,708-98 ft., flowed 436 bbl. in 3 hours, rated at 3,052 bbl. per day. Texas Co.'s No. 2 W. T. Richardson, SW SW NW Section 32-2n-2e, deepened from 1,688 ft. to Aux Vases sand at 1,711-80 ft., and shot with 110 qt. at 1,663-1,773 ft., flowed 240 bbl. in 3 hours, rated at 1,680 bbl. a day.

Texas Co.'s No. 7 Wayman, near C NW NW NW Section 32-2n-2e, deepened from 1,688 ft. to 1,773 ft. and shot with 105 qt. at 1,668-1,773 ft., flowed 293 bbl. in 3 hours, estimated at 2,051 bbl. per day. Texas Co.'s No. 9 L. Hawthorne, 330 ft. from south and 216 ft. from west lines of SE SW Section 5-1n-2e, deepened from 1,809 ft. to Aux Vases sand at 1,817-73 ft., and shot with 75 qt., flowed 51 bbl. in 3 hours, rated at 357 bbl. a day. Texas Co.'s No. 7 Friesner, NW SE NW Section 32-2n-2e, deepened from 1,720 ft. to Aux Vases sand at 1,724-1,800 ft., shot with 110 qt., flowed 180 bbl. in 3 hours, rated at 1,260 bbl. Texas' No. 5 Mac Roberts, 1,665 ft. from east and 255 ft. from south lines of NE¼ Section 32-2n-2e, deepened from 1,794 ft. to Aux Vases at 1,794-1,857 ft., flowed 120 bbl. in 3 hours, rated at 840 bbl. per day. Texas' No. 3 L. Maxwell, SW NE NE Section 32-2n-2e, deepened from 1,797 ft. to Aux Vases sand at 1,796-1,863 ft., flowed 120 bbl. in 3 hours, rated at 840 bbl. a day. Texas Co.'s No. 10 Frederich, NW NW NW Section 29-2n-2e, Benoist sand at 1,882-92 ft., pumped 350 bbl. per day.

In the southern end of the Salem field Texas Co. deepened No. 5 Hawkins, 990 ft. from south and 250 ft. from west lines of SE SW Section 5-1n-2e, from 1,791 ft. to Aux Vases sand at 1,808-59 ft., and shot it with 70 qt. at 1,786-1,856 ft. It flowed 55 bbl. in 3 hours and was rated at 385 bbl. a day. Kingwood Oil Co.'s No. 6 Devor, NE NW NW Section 17-1n-2e, Fredonia lime topped at 2,028 ft., pay at intervals from 2,060 ft. to 2,090 ft., pumped 206 bbl. Ohio Oil Co.'s No. 12 Murray, SE NE SW Section 7-1n-2e, shot with 20 qt. in Benoist sand at 1,846-62 ft., pumped 75 bbl. a day.

Joe Ruck's No. 1-B Hawkins, in S½ SW NE NW

Section 8-1n-2e, was abandoned at 1,260 ft. Texas Co.'s No. 8 G. Johnson, NE NE NW Section 6-1n-2e, Aux Vases sand at 1,908-31 ft., dry and abandoned. No showings reported in any sand.

In Clay County Pure Oil Co.'s No. 2 Johnson A, C W½ NE SW Section 27-1n-7e, total depth 3,146 ft. Pipe perforated at 3,026-43 ft. in Aux Vases sand, and at 3,100-10 ft. in Roseclaire; acidized with 5,000 gal., flowed 422 bbl.

In St. Clair County Demos' No. 2 Shellhardt, north end of Lot 72, Survey 178, Dupo field, hole full of water, and abandoned in Trenton lime at 535-90 ft.

In Clinton County Williams and others' No. 1 Hanseman, NE cor. SE SW SE Section 1-1n-1w, dry and abandoned at 1,616 ft. McClosky lime was topped at 1,542 ft.

Wabash County

In Wabash County Magnolia Petroleum Co.'s No. 1 Wallace, NE NE NE Section 23-1s-13w, shot with 4 qt. at 1,952-60 ft., pumped 6 bbl. of oil and 18 bbl. of water. Skelly Oil Co.'s No. 1 Schrodt, NE cor. NW¼ Section 29-2s-13w, Cypress sand at 2,478-85 ft., pumped 78 bbl. in 24 hours. Bartlett and Continental Oil Co.'s No. 1 Community, SE NW SE Section 30-2s-13w, Cypress sand at 2,462-77 ft., shot with 10 qt., pumped 173 bbl. Tide Water Associated Oil Co.'s No. 3 LeGier, NW SE NE Section 17-2s-13w, Cypress at 2,402-12 ft., pumped 52 bbl. in 12 hours.

Yount's No. 3 Epler, SE NE SW Section 9-2s-13w, in the Keensburg pool, Cypress sand at 2,429-50 ft., shot with 20 qt. on bottom, pumped 35 bbl. Deaner's No. 3 Wilkins, NW SW SE Section 9-2s-13w, Cypress at 2,447-66 ft., shot with 40 qt., pumped 260 bbl. J. J. Deaner's No. 2 Williams, SW SW SE Section 9-2s-13w, Cypress at 2,449-65 ft., shot with 40 qt., pumped 300 bbl. Anding & Riley's No. 1 Fitzgerald, Lot 11, Block E, Keensburg, Section 9-2s-13w, Cypress sand at 2,418-40 ft., pumped 6 bbl. F. M. Blair's No. 1 Epler, Lot 11 Block P, Cypress sand at 2,453-69 ft., shot with 15 qt. on bottom, pumped 127 bbl. Chisom and others' No. 1 Shepard, Lot 12, Block P, Cypress at 2,445-63 ft., shot with 10 qt., pumped 157 bbl. Hayes and others' No. 1 Tucker, Lot 5, Block N, Cypress sand at 2,427-48 ft., shot with 30 qt., pumped 237 bbl. Sol Simon and others' No. 2 Elkins, NW cor. SW SW SE Section 9, Keensburg, Cypress at 2,482-88½ ft., pumped 75 bbl. D. & H. Drilling Co.'s No. 6 Bump, 1,075 ft. north and 230 ft. west of SW cor. Section 9-2s-13w, townsite, Cypress at 2,430-40 ft., shot with 10 qt. on bottom, pumped 25 bbl. Yount's No. 1 Epler, NE cor. SE NE SW Section 9-2s-13w, dry and abandoned in Cypress sand at 2,434-46 ft. Olin and others' No. 1 Shultz, NE SW SE Section 31-2s-13w, Cypress sand at 2,498-2,515 ft., dry and abandoned. Dee Brothers and others' No. 1 LeGier, NW cor. SW SE SW Section 10-2s-13w, Cypress sand topped at 2,416 ft., total depth 2,495 ft., dry and abandoned.

White County

In White County Kingwood Oil Co.'s No. 1 Fearn, SW NE NW Section 19-3s-11e, Fredonia lime top at 3,070 ft., perforations made at 3,074-84 ft. and 3,162-65 ft., pumped 30 bbl. of oil and 6 bbl. of water. Riley & Lacy's No. 1 Danby, C S½ SW NE Section 31-3s-8e, McClosky lime at intervals at 3,357-90 ft., acidized with 2,000 gal., pumped 292 bbl. T. F. Morrow's No. 1 W. W. Gray, trustee, NE NE SE Section 30-3s-8e, McClosky at 3,355-74 ft., acidized with 1,000 gal., pumped 46 bbl. of oil and 96 bbl. of water. Southern Petroleum Co.'s No. 2 Walker C, NE SW NW Section 16-3s-9e, McClosky lime at 3,388-92 ft., acidized with 5,000 gal., pumped 160 bbl. Southern Illinois Petroleum Co.'s No. 2 P. Walker B, SE SW SW Section 9-3s-9e, Fredonia pay at 3,380-89 ft. and 3,397-3,404 ft., pumped 250 bbl.

In Jefferson County Carter Oil Co.'s No. 1 Luchsinger-Hall, NW NE NE Section 4-1s-2e, got Bethel sand at 1,959 ft., and shot it with 10 qt. at 1,965-67 ft. The well pumped 160 bbl. of oil and 28 bbl. of water. Shell Oil Co., Inc.'s No. 1 Ragan, SW SW SE Section 25-2s-1e, was dry and abandoned at 3,973½ ft. Devonian lime was topped at 2,739 ft. Magnolia Petroleum Co.'s No. 2 Oslager, NE SW SW Section 22-2s-1e, had Roseclaire lime at 2,152-78 ft., and pumped 227 bbl. in 24 hours.

In Wayne County Illinois-Mid-Continent Oil Co.'s No. 1 Cope, SE NE SE Section 28-1s-7e, was dry and abandoned at 3,367 ft. Fredonia lime was topped at 3,319 ft. Robinson and others' No. 1 Joe Felix A, SW SW SW Section 26-2s-8e, McClosky lime at 3,353-58 ft. and 3,394-3,403 ft., acidized with 5,000 gal., flowed 60 bbl. in 3 hours, rated at 400 bbl. a day.

In Edwards County Magnolia Petroleum Co.'s No. 2 Etheridge, SW cor. NW SW SW Section 18-3s-14w, McClosky lime at 3,125-29 ft., acidized with 2,000 gal., pumped 76 bbl.

In White County Kingwood Oil Co.'s No. 1 Metcalf, SW NE SW Section 31-3s-11e, dry and abandoned at 3,205 ft., St. Louis lime top at 3,190 ft.

In Washington County Shell Oil Co., Inc.'s No. 7 Sharkowski, NW NE NW Section 23-3s-3w, Benoist sand at 1,251-89 ft., shot twice with 10 qt., pumped 127 bbl.

In Perry County E. S. Adkins' No. 1 Truax-Traer, SW NE SW Section 25-5s-2w, dry and abandoned at 1,613 ft. St. Louis lime was topped at 1,598 ft.

In Franklin County E. S. Adkins' No. 1 Old Ben Coal Co., SE SW NW Section 21-6s-2e, was dry and abandoned at 3,000 ft. St. Louis lime was topped at 2,895 ft.

Gulf Refining Co. abandoned No. 2 U. S. Fuel, NW NE NE Section 32-5s-3e, Franklin County, as a dry hole at a total depth of 4,180 ft. Devonian lime was topped at 4,628 ft., but no showing was found in the formation.

New Wildcat Operations

In Coles County Koder's No. 1 Horsley heirs, SE NW NE Section 31-12n-10e, drilling at 300 ft. Perry Miller's No. 2 Ingrum, C S½ NW NW Section 16-11n-10e, location.

In Montgomery County Jack Brown's No. 1 Cecil Lipp, C SW SW SE Section 28-10n-3w, location.

In Cumberland County Joe Blalock's No. 1 O. Gard-

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New Indiana Fields Slowed Down by Lack of Outlets

EVANSVILLE, Ind., Nov. 6.—The new Indiana oil fields are still handicapped by a shortage of outlets for new production. A number of wells in the past week were shut in after they had proved themselves productive. Eight oil wells and four dry holes were completed in the state, in addition to which several near completions were reported. Following is the week's record:

In Posey County Al Wilhelmi and others' No. 1 Zimmerman, NE SE SW Section 17-7s-14w, was dry and abandoned at 3,021 ft. It penetrated all regional formations, but none showed any signs of oil. Ste. Genevieve lime was topped at 2,793 ft.

Superior Oil Co. has a 300-bbl. well in No. 11 New Harmony Land Co., SE NW SW Section 10-5s-14w, at 2,166-85 ft., but shut the well in. Same company's No. 10 New Harmony, SW SE SW Section 10, was shut in after it had cleaned itself into pits, total depth 2,257 ft. Same company's No. 12 New Harmony, NW SW SW Section 10, had saturated Waltersburg sand at 2,158-70 ft. and set 7-in. casing. Superior's No. 13 New Harmony, NW SE SW Section 10, was drilling at 1,395 ft., and No. 14, SE SW SW Section 10, is a rig up.

Roberts Brothers' No. 1 Keck, NW NE NW Section 34-3s-14w, had Aux Vases sand at 2,788-99 ft. and pumped 170 bbl. the first 11 hours; then 392 bbl. in 24 hours and then 150 bbl. in 24 hours, finally settling to 80 bbl. a day. It was completed.

Joe Lindas' No. 1 Seifert, NE cor. SE SW Section 19-6s-12w, was shot with 20 qt. at 345-57 ft., but it did not help any and Lindas may give the well another shot.

Haynes & Thomas have started No. 4 Seifert, NW cor. SW SE Section 19-6s-12w, and were drilling at 400 ft.

Gibson County

Apex Drilling Co.'s (formerly reported Gwin Drilling Co.) No. 1 Julian, NE NE SE Section 26-3s-14w, in Gibson County, was acidized with 1,000 gal. at a total depth of 2,952 ft., and flowed into pits at the rate of 10 bbl. per hour. It was shut in for lack of storage.

Hollandsworth & Bander completed No. 23 Cooper, SE NW NE Section 24-3s-14w, in sand at 2,503-19 ft. It made a 120-bbl. pumper. Continental Oil Co.'s No. 1 Keck, SE SE SE Section 27-3s-14w, had Cypress sand at 2,499-2,519 ft. and flowed 84 bbl. through tubing in 4 hours.

Hollandsworth & Bander had some near completions on the Cooper farm. No. 22 Cooper, NW NW NW Section 19-3s-13w, had pay at 2,056-86 ft., and pumped 50 bbl. in 24 hours and was to be shot. No. 18 Cooper, NW SE SE Section 12-3s-14w, was drilling plugs after setting pipe at 2,490 ft., total depth 2,508 ft.

Papoose Oil Co.'s No. 2 Cooper B, SE SE SW Section 12-3s-14w, was a hole full of water from McClosky sand at 2,876-81 ft., total depth 2,881 ft. Removable pipe had been set at 2,490-2,505 ft. and 2,118-39 ft., and the hole was being plugged back to test those formations. Fitzpatrick & Bander were shut down at 2,870 ft. in No. 4 Cooper, SE NW NE Section 13-3s-14w. Lewis Production Co. shut in No. 5 Cooper D. NE NE NW Section 13-3s-14w. It is an estimated 50-bbl. well at a total depth of 2,139 ft.

Schuean & Whitlock's No. 1 Kohlmeier, NW SW SE Section 14-3s-9w, was dry and abandoned at 991 ft. Lane Gray and others plugged back No. 1 McCarthy, NW SE NW Section 13-2s-11w, from 2,200 ft., and shot a sand at 1,812-21 ft. It produced 15 bbl. of oil and 15 bbl. of water and was shut in.

In Martin County Newton Pipe Line Co.'s No. 1 Hiatt, NE NE SE Section 36-4n-5w, drilling at 220 ft.

In Dubois County Damron Brothers' No. 3 Humbert, NE SW SW Section 25-1s-4w, had a small oil showing at 225 ft., Glen Dean sand at 312 ft., and was drilling at 515 ft. Apex Drilling Co.'s No. 1 Grant, NE NW NE Section 28-1s-3w, building rig.

In Pike County A. J. Walker and others' No. 1 Colvin, C N½ NW NE Section 30-1n-6w, spudded.

In Clark County N. M. Smith and others' No. 1 Schubnell, Grant 182, Township 1s-6e, location for a 700-ft. test.

In Daviess County D. L. Norris and others' No. 1 Daviess County Land Co., NW cor. NE NE Section 17-2n-5w, is a small gas well completed in sand at 310-20 ft. Fred L. Hartman's No. 1 White, NW NW SW Section 22-2n-9w, had Ste. Genevieve lime at 1,149 ft., a showing of oil at 1,195-97 ft., and water at 1,197-1,205 ft., and was drilling at 1,250 ft.

In Knox County A. C. Thomas and others' No. 1 Schwab, Lot 44, Township 2n-10w, was acidized with 750 gal. and with 2,000 gal., and swabbed a little free oil. The crew was testing. Newton Pipe Line Co.'s No. 1 Like, C E½ NE Donation 171, Township 2n-9w, underreaming at 1,390 ft. M. I. T. Syndicate's No. 1 Keith, SW SW SW Section 5-5n-9w, drilling at 650 ft. J. S. Young, Jr. and W. H. Bode's No. 1 Mabes, NW NW NW Section 27-5n-8w, was dry and abandoned at 1,275 ft. Mississippi lime was topped at 1,209 ft. and there was a showing of oil at 1,273 ft. Michel Brothers made a location for No. 1 Jasper Schloot, SE cor. Section 2-5n-7w. M. I. T. Syndicate's No. 1 McHenry, C S½ NW SW Donation 214, Township 5n-9w, drilling at 2,610 ft.

In Sullivan County E. L. Shoudy and S. H. Brown's No. 2 Allan Osburn heirs, NE cor. NW SW SE Section 12-8n-10w, is a location. Siosi's No. 1 Cushman, NE NE SE Section 18-8n-10w, was shut down at 1,463 ft., while repairs were being made. Ste. Genevieve lime was topped at 1,422 ft., and 450 ft. of water rose in the hole from oolitic lime at 1,455-63 ft. Niagaran Oil Co.'s No. 1 Knowles, SE SE NW Section 6-8n-9w, drilling at 260 ft.

In Decatur County Hoosier Public Utilities Co.'s No. 205 Schoettman, C SW NE Section 14-9n-9e, was drilling at 200 ft.

In Vigo County Siosi's No. 1 Stufflebeam, C N½ NW SE Section 16-10n-10w, was drilling in lime at 1,120 ft. It had water at 705 ft. and at 905 ft. which filled the hole. Ben H. Nations' No. 1 Boyce, SE SE SW Section 33-11n-9w, had started drilling with a rotary.

In Owen County Young & Ellis' No. 1 Rice, NE NE NW Section 29-11n-3w, was drilling at 1,135 ft.

In Hancock County J. H. Snyder's gas well, No. 1 Gates, SE SE SW Section 34-16n-7e, soon exhausted itself and was abandoned as a failure.

In Jay County Ellen K. Burke made a location for No. 1 Outcalt, 1,280 ft. from south and 900 ft. from

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Come to

FORT WORTH

in May

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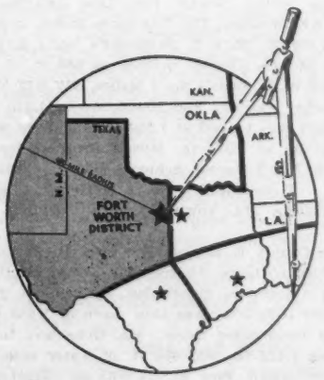

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ner, SE cor. NE NE Section 2-10n-10e, sand at 455-85 ft., set 4½-in. casing at 455 ft., cleaned out the hole, which filled 300 ft. with oil. National Consumers' No. 1 Ward, NE SE NE Section 17-9n-9e, total depth 2,152 ft., pulled all but one joint of 6⅝-in. casing; fishing. Dan Huddleston and others' No. 1 Emile Young, NE SE NW Section 6-9n-11e, drilling below 920 ft.

In Clinton County Caskaid's No. 1 Adams, SE SE NE Section 13-3n-1w, location. International Oil Co.'s No. 1 Adams, SE NE NE Section 13-3n-1w, location.

In St. Clair County Harris and others' No. 1 City Park, near C NW SE Section 34-2n-9w, drilling below 160 ft.

In Clay County R. O. Harding's No. 1 Simpson, C N½ NE SE Section 10-1n-6e, rigging up rotary.

In Wabash County United States Oil Co.'s No. 1 Stillwell, 1,706 ft. from south and 2,685 ft. from west lines of Section 7-1n-11w, rig up.

In White County Sam Jarvis' No. 1 Endicott, SW NW SW Section 31-4s-11e, moving in rotary tools. Bruce Martin's No. 1 Fitzgerald, W½ SE NW SW Section 30-4s-11e, set 10-in. casing at 118 ft. Yandell Rogers' No. 1 Holderby estate, NE NE NW Section 35-5s-9e, plts. Roy Johnston's No. 1 Storms heirs, NE NW SE Section 23-6s-9e, location.

In Hamilton County Carl Robinson's No. 1 Gholson, NE NE SW Section 16-7s-7e, moving in rotary tools.

In Saline County Simon Henry and others' No. 1 Seton, SW SW SE Section 1-8s-7e, moving in rotary.

In Gallatin County J. C. Ingram's No. 1 Beverly & Turns, near C NE Section 19-9s-8e, location for a Devonian test.

WESTERN KENTUCKY

OWENSBORO, Ky., Nov. 6.—Three small oil wells and six dry holes and a couple of near completions were recorded in the western Kentucky fields in the past week. Nine new operations were started. Following are the details of the week's results:

Breckinridge County, McQuady district, R. H. Grant's No. 1 Jolly, dry and abandoned at 539 ft.

Butler County, Silver City district, Harry Wheeler's No. 2 Birdie Cooper, 9-bbl. well in Jett sand, total depth 504 ft. J. C. Miller, trustee's No. 7 Martha Hawes, rigging up. Morgantown district, Henry and Ross' No. 1 Forsyle and Neal, dry and abandoned at 1,114 ft.

Daviess County, Utica district, H. C. Farmer and others' No. 4 J. E. Brown, moving in. H. C. Farmer and others' No. 1 P. N. Moorman, dry and abandoned at 1,440 ft. H. C. Farmer and others' No. 5 Frank B. Nation, rig on location. Ohio Oil Co.'s No. 1 Paul Sands, location. Baldwin Oil Co.'s No. 3 Dr. A. A. Westerfield, total depth 1,781 ft., plugged back to 1,732 ft., acidized in McClosky lime, now plugging back to 1,520 ft. to shoot Bethel sand. Birk City district, Jess Ashby's No. 2 Laura Hagan, will acidize McClosky lime at 1,840-46 ft., no estimate on production, total depth 1,887 ft. Handyville district, Ohio Oil Co.'s No. 1 W. F. Seay, dry hole through McClosky lime, total depth 1,889 ft.

Hancock County, Duke's School, W. J. Flesher and others' No. 1 George Newman, dry and abandoned at

(Continued on Page 67)

EASTERN KENTUCKY

ASHLAND, Ky., Nov. 6.—A number of completions, included in a month-end report, boost the activities in eastern Kentucky this week.

Regular operations have remained at about the same level but several operators are reported ready to start operations in the near future.

Warfield Natural Gas Co. completed No. 4839, Lester Day land, on Troublesome Creek, in Knott County, at 3,172 ft., in shale, initial production 355,000 cu. ft. of gas.

Virginian Gas & Oil Co. has a 25-bbl. well in No. V-1273 Federal Oil & Gas Co., on Little Crooked Creek in Martin County, total depth 1,287 ft., in Maxon sand.

Columbian Fuel Co.'s No. GW-834 J. Mogg-Sword, Tract 1, on Island Creek in Pike County, completed at a total depth of 3,076 ft., in shale, had an initial production of 536,000 cu. ft. of gas.

Columbian Fuel Co., after acidizing No. GW-815 on Auxier and others land on Levisa Fork in Floyd County, had a daily production of 671,000 cu. ft. of gas. The same company completed No. GW-833 on Benton Smith Tract 3, on Benton Branch in Pike County, at a total depth of 1,884 ft., in Maxon sand, with an initial production of 379,000 cu. ft. of gas, and No. GW-835 Tierney Land Co. land, on Stratton Fork in Pike County, with a daily flow of 607,000 cu. ft. of gas at a total depth of 2,010 ft.

(Continued on Page 73)

Kansas Developments

By DAL DALRYMPLE

Rooks County Area Extended; Lansing Discovery in Barton

Discovery of a new productive area in northern Barton County, Kansas, was indicated at B. B. & M. Drilling Co. and others' No. 1 Krier, CEL SE SE Section 30-16-11w, wildcat which found oil in Lansing lime but was drilling ahead toward Arbuckle lime. The Lansing-Kansas City series was found at 3,040 ft., with pay topped at 3,130 ft., and oil rose 700 ft. in the hole. It was not tested, and drilling continued below 3,200 ft., with Arbuckle lime as the objective. The outpost is about 1½ miles southwest of the Prusa pool and is on an 80-acre farmout from Continental Oil Co. C. R. Pigott and George F. Johnson are interested in the test.

Extension of the Eberhardt pool in eastern Barton County five-eighths of a mile northwestward was indicated at Stanolind Oil & Gas Co.'s No. 3 Eberhardt, CNL NE SW Section 13-19-11w. Spotted saturation and fair porosity was found in Arbuckle lime cores at 3,326-45 ft. If completed as an oil well, it will be the fifth producer in the pool.

Possible extension of another Barton County pool was indicated at Shell Oil Co.'s No. 1 Herthel, CSL NW¼ Section 15-17-11w, about 1 mile southwest of the Kraft area. It found Arbuckle lime at 3,274 ft., and cores to 3,285 ft. had scattered oil showings and fair porosity. Seven-inch pipe was set on top of the lime for production test.

The Westhusin pool in Rooks County was extended ¼ mile southwestward at Plainstock Oil Co.'s No. 2 Westhusin, CWL SE SE Section 11-9-17w. It had initial production of 415 bbl. of oil daily from Lansing lime at 3,158 ft., potential being made after it was acidized with 2,000 gal. Another extension well gave promise of extending the pool about ½ mile southeastward. It was C. W. Trickett and others' No. 1 Dougherty, CW½ NE NW Section 13-9-17w, which found Lansing lime at 3,142 ft., had some free oil in the hole and was drilling ahead below 3,180 ft.

The Shallow Water Refining Co. has obtained a new source of supply for its Scott County refinery, which has been operating below capacity because of lack of oil. It was announced the company had completed a deal with Continental Oil Co. to purchase the latter's production in the Aldrich pool, Ness County. The Continental company has an allowable daily production of about 200 bbl. of high-gravity oil in the Aldrich area and is expected to drill additional wells to bring the production to 500 bbl. daily. The Shallow Water refinery will continue to purchase about 1,000 bbl. daily from Atlantic Refining Co. wells in the Scott and Finney county fields.

Wildcat Operations

Thorpe Drilling Co. and others' No. 1 Huffman, NW NW SW Section 11-13-1e, wildcat in Dickinson County, entered Arbuckle lime at 3,233 ft., the hole filled with water at 3,240 ft., water increased at 3,256 ft. and it was abandoned at 3,262 ft., total depth. Hunton lime was topped at 2,807 ft., based at 2,972 ft.; Viola lime was found at 3,048 ft., and Simpson zone at 3,162 ft. Operators of this well previously were listed as Franks and others.

A shallow wildcat failure was recorded in Cowley County at Allred's No. 1 Peninger, C NE NW Section 35-32-5. It had a slight showing of gas in sand at 680 ft., total depth, but was dry and abandoned.

Crown Petroleum Corp. and others' No. 1 Ernsting, C W½ NE SE Section 1-20-12w, wildcat ¾ mile southeast of Ellinwood, Barton County, and an equal distance northwest of the West Ellinwood pool, was moving in cable tools. Derrick was completed nearly a month ago.

Hollett and others' No. 1 Butler, SE SW SE Section 28-20-15, Coffey County wildcat, was drilling ahead after setting 6⅝-in. casing at 1,425 ft. Mississippi lime was expected at around 1,625 ft.

Ellis County

Big producers continued the order of the day in Ellis County, where numerous large mechanically determined potentials are reported. It should be remembered that the oftimes tremendous potentials reported, usually in the Bemis or South Burnett areas, are made by depthograph or echometer calculations without actual flow tests having been made.

Shell Oil Co.'s No. 26 Rumsey, NW SW NE Section 23-11-17w, Bemis field, found Arbuckle lime at 3,369-90 ft., total depth, and swabbed 244 bbl. of oil and no water in 4 hours. It was given depthograph potential rating of 35,116 bbl. of oil daily, with maximum allowable potential of 3,500 bbl.

Darby Petroleum Corp.'s No. 6 Jorgenson, C S½ NE SW Section 7-11-17w, South Burnett area, was completed for depthograph potential of 10,200 bbl. of oil daily, with maximum allowable potential of 3,500 bbl. It found Arbuckle lime at 3,377-84 ft., total depth, and oil rose 3,500 ft. in the hole in 1¾ hours. It was acidized with 1,500 gal.

Skelly Oil Co.'s No. 1 Koblitz, C E½ SE NE Section 22-12-18w, Koblitz pool, drilled Arbuckle lime at 3,668-77 ft., total depth, pumped 112 bbl. of oil without water in 8 hours and made potential of 336 bbl.

Central Petroleum Co.'s No. 1 Hadley, C N½ NW SE Section 12-11-18w, was building rotary rig. Phillips Petroleum Co.'s No. 3 Peavey, C N½ NE SE Section 13-11-18w, was a location. Shell Oil Co.'s No. 28 Rumsey, NE SW NE Section 23-11-17w, was a cellar.

Russell County

Coralena Oil Co.'s No. 5 Sellens, C N½ S½ S½ Section 20-15-13w, Trapp field, Russell County, pumped 482 bbl. of oil in 8 hours and made daily potential of 1,447 bbl. Production was from Arbuckle lime at 3,258-64 ft., total depth.

R. H. Shields' No. 1-A Krug, C N½ NW SE Section 13-15-14w, had Arbuckle lime at 3,336-41 ft., total depth. It was treated with 2,000 gal. of acid, pumped 60 bbl. of oil in 8 hours and made daily potential of 180 bbl., cutting 20 per cent water.

New work in Russell County: Skelly Oil Co.'s No. 5 Rein, C N½ NW SE Section 8-15-13w, rigging up rotary; Trojan Oil Co.'s No. 1-A Fiegler, SE SW NE Section 11-15-14w, building rig; Texon Oil Co.'s No. 11 Letsch, SE NE SW Section 26-14-13w, building rotary rig; Alva Billings and others' No. 2 Hall, SE NE SE Section 21-14-14w, cellar.

Barton County

Shell Oil Co., Inc.'s No. 5-B Ehrlich, NW NE SW Section 1-16-14w, South Trapp area, Barton County, was completed in Arbuckle lime at 3,319-36 ft., total depth. It swabbed 315 bbl. of oil in 7 hours and made depthograph potential of 1,314 bbl.

Alpine Oil & Royalty Co.'s No. 1 Duncan, S½ SE NW Section 8-20-11w, was moving in material. Shell Oil Co., Inc.'s No. 1 Oeser, SW SW NW Section 17-16-11w, was a cellar.

Chase County

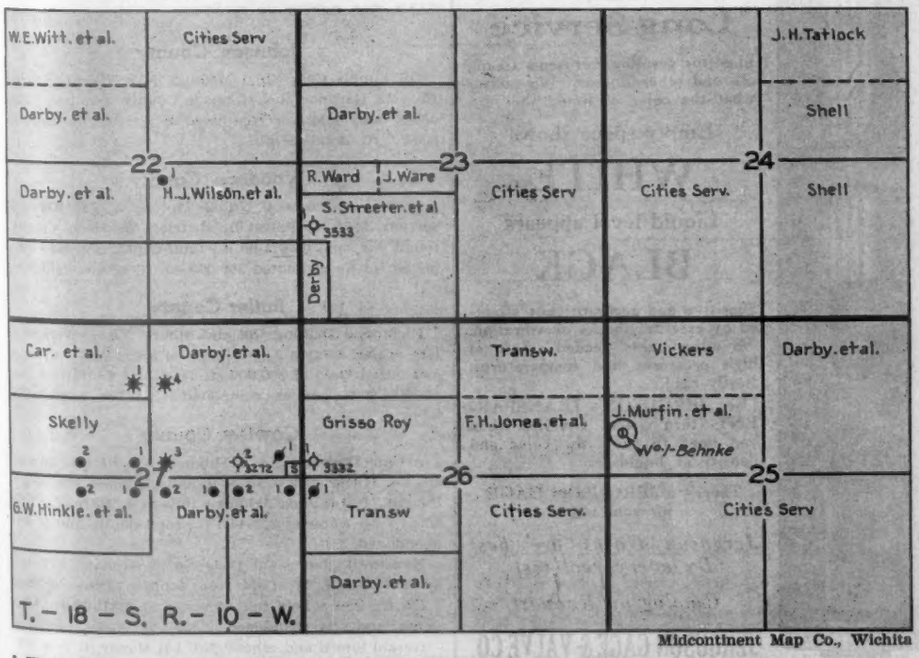
Walter Kline's No. 1 Breese, SE NE SW Section 27-19-7, Elmdale gas area, Chase County, was dry and abandoned at 725 ft., total depth.

Rice County

McPherson Drilling Co.'s No. 3-A Cramm, SW SE NW Section 15-19-9w, Cramm pool, Rice County, drilled Arbuckle lime at 3,188-3,200 ft., total depth, swabbed 30 bbl. of oil in 2½ hours, swabbing 50 ft. off bottom. It was acidized and made depthograph potential of 1,042 bbl. of oil.

H. B. Garden and others' No. 1 Majors, C E½ SW NW Section 23-21-7w, South Wherry area, had conglomerate at 3,389-3,425 ft., total depth, perforated 40 ft. of liner and pumped 40 bbl. of oil in 24 hours.

First reports in Rice County: Bishop Oil Co.'s No. 2 Cramm, NW NE SW Section 15-19-9w, rigging rotary; C. L. Carlock's No. 1 Renollet, NE NW SE Section 36-



Midcontinent Map Co., Wichita

I. W. Murfin and others' No. 1 Behnke, Section 25-18-10w, 1 mile east of the Orth pool, Rice County, found pre-Cambrian quartzite at 3,202-6½ ft., and the hole filled with oil when plug in 7-in. casing set at 3,199 ft. was drilled

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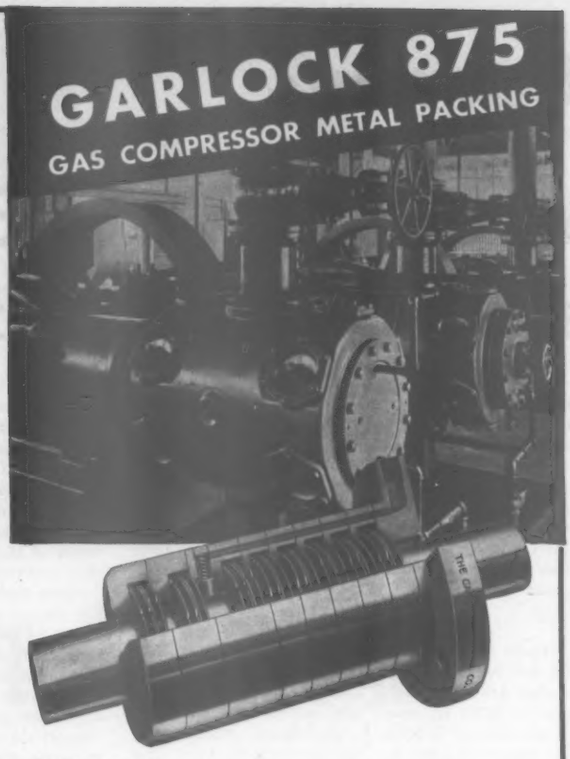

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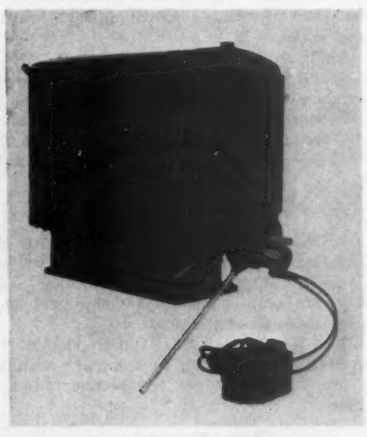

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20-8w, building rotary rig; El Dorado Refining Co. and others' No. 3 Gassman, NE NE SW Section 5-21-7w, rigging up rotary; Vickers Petroleum Co.'s No. 2 Roesler, C N½ N½ SW Section 5-18-10w, building rotary rig.

McPherson County

Westgate-Greenland Oil Co.'s No. 2 Henne, C S½ SE SW Section 18-17-1w, Roxbury pool, McPherson County, was acidized and pumped 333 bbl. of oil in 8 hours, making daily potential of 999 bbl. Production was from Mississippi lime pay at 2,652-65 ft., total depth.

H. C. Bennett and others' No. 1 Knackstedt, C S½ SW SW Section 30-20-5w, Bornholdt pool, found pay in Mississippi lime at 3,355-60 ft., was bottomed at 3,369 ft., pumped 151 bbl. of oil in 8 hours and made daily potential of 454 bbl.

Mueller and others' No. 3 Suffield, SE SW SE Section 25-19-2w, was rigging rotary. Continental Oil Co.'s No. 1-A Bornholdt, C E½ NE SE Section 30-20-5w, was rigging rotary. Same company's No. 4 Mattson, C N½ NW NW Section 31-20-5w, was building rotary rig.

Estimated Daily Production

Estimated daily production for Kansas for the week ended November 4, and for the preceding week was as follows:

	Barrels	
	Nov. 4	Oct. 28
Oxford City	775	800
Burrton	10,425	10,900
Ritz-Canton	4,250	4,475
Graber	2,775	3,175
Hollow-Nikkel	2,075	2,175
Lerado	1,075	1,400
Voshell	1,575	1,650
Wellington	2,150	2,200
Ellsworth County:		
Lorraine	1,600	1,350
Other pools	1,515	1,715
Rice-Barton counties:		
Bloomer	2,950	3,600
Chase	4,075	4,850
Geneseo	3,550	3,400
Raymond	325	450
Silica	13,575	13,675
South Silica	1,850	2,450
Keesling	975	1,075
Wherry	3,150	4,000
Miscellaneous Rice	4,985	4,980
Miscellaneous Barton	7,575	10,010
Russell County	25,500	28,625
Sedgwick County	3,250	3,375
Ellis County:		
Bemis	7,350	5,675
Miscellaneous	4,460	5,735
Kingman County	670	780
Stafford County	8,730	8,310
Greenwood County	9,100	8,700
El Dorado	7,600	7,600
Other fields	35,365	40,070
Total Kansas	173,250	187,200

Marion County

Streeter and others' No. 1-A Houser, NW NW SE Section 28-17-4, Lost Springs pool, Marion County, had Mississippi lime pay at 2,448-58 ft., total depth. Oil rose 1,800 ft. in the hole in 5 hours and it was estimated capable of pumping 150 bbl. of oil daily.

R. E. Youker's No. 2 Martin, C S½ S½ S½ Section 3-17-4, was rigging up machine.

Johnson County

OK Supply Co.'s No. 1 McCann, NW NW SE Section 15-14-22, Gardner pool, Johnson County, pumped 3 bbl. of oil daily and was completed in Bartlesville sand at 800-23 ft., total depth.

Woodson County

Turner and others' No. 2 Tipton, C N½ SW SW Section 32-15-14, Batesville district, Woodson County, found gas sand at 671-99 ft., total depth, and was completed for an estimated 500,000 cu. ft. of gas daily.

Butler County

Richmond Drilling Co. and others' No. 5 Walker, C E½ SE NE Section 3-28-4, Augusta area, Butler County, had initial yield of 100,000 cu. ft. of gas daily from pay at 1,452-80 ft., and was completed at 1,487 ft., total depth.

Cowley County

Arthur Brewer's No. 2 Hughes, NE NE SE Section 20-31-4, Hittle field, Cowley County, topped Mississippi lime at 3,040 ft., had Arbuckle lime at 3,390 ft., the hole filled with water at 3,394-95 ft., total depth, and it was abandoned.

Kansas-Oklahoma Oil Co.'s No. 5 Graham, SW cor. Section 10-32-4, Winfield area, topped Layton sand at 2,275 ft., had a hole full of water at 2,335-42 ft., total depth, and was abandoned.

Gerald Smith and others' No. 1-B Haney, C W½ NW SW Section 9-33-6, Wilson pool, had Arbuckle lime at

(Continued on Page 71)

Oklahoma Operations

By DAL DALRYMPLE

Extend Tillman County Field; Big Wells at Cement, Ramsey

Features of the week in Oklahoma oil fields included extension of the Frederick area in Tillman County; another producer in the new Hobart field, Kiowa County; completion of large producers in the Cement field, Caddo County, and the Ramsey pool, Payne County, and an oil discovery in the old Chickasha gas area, Grady County.

Indian Territory Illuminating Oil Co. and others' No. 1 Peter, SW NW NW Section 6-3s-18w, extended the Canyon-lime zone in the Frederick field, Tillman County, ½ mile eastward. After failing to find production in Arbuckle lime at 5,416 ft., it was plugged back and tested Canyon lime through perforations at 3,123-3,260 ft. The swab was run three times and it then cleaned itself and showed for a big producer, when it was shut in for tankage and production test. It will be the thirteenth producer in the Canyon-lime zone.

The same operators' No. 1 Fillmore, SW SW SE Section 36-2s-19w, on the north side of the Frederick field, was near completion as an Arbuckle-lime producer. It flowed 98 bbl. of oil in 2 hours at total depth of 5,165 ft. in Arbuckle lime, and was shut in for new connections pending production test. It previously had flowed 162 bbl. of oil in 4 hours while the core hole was being reamed. This gives the area a new producing horizon.

The third well in the new Hobart pool, Kiowa County, was showing as a sizeable producer at total depth of 1,159 ft. It is Shell Oil Co., Inc's No. 1 Kelsay, NW NW SW Section 20-7-17w, south offset to the discovery well, which is rated as a 1,500-bbl. well. The No. 1 Kelsay had oil showing at 1,141-42 ft., with increasing oil at 1,150-59 ft. It flowed 140 bbl. of oil in 4 hours, and while drilling in 300 to 400 bbl. had flowed into the pits.

Ohio Oil Co. and others' No. 10 Pau-Kune, NE SE SW Section 3-5-9w, Cement field, Caddo County, had Rowe sand at 3,347-86 ft., another sand at 3,453-78 ft., total depth, perforated at 3,346-85 ft., flowed 219 bbl. of oil in 2 hours and later made daily potential of 3,362 bbl.

Earlier in the week, Aladdin Oil Co.'s No. 1 Trotter, SE NE SW Section 3-5-9w, was completed for potential of 3,307 bbl. daily. About 25 operations were under way on Cement townsite and elsewhere in the far-spreading field.

Mid-Continent Petroleum Corp. and others' No. 7 Brandon, SW SE NE Section 13-18-1e, Ramsey pool, Payne County, had Wilcox sand at 4,777-4,800 ft., total depth, and made daily potential of 5,610 bbl. of oil, with 3,400,000 cu. ft. of gas.

Best showing of oil ever found in the Chickasha gas field, Grady County, was reported at Alma Oil Co.'s No. 5 Pettit, SE SE SE Section 11-4-8w, near the south end of the field. It was deepened from old gas zone at about 2,300 ft. to 3,360 ft., casing was perforated at 3,249-64 ft., and swabbed an estimated 50 bbl. of 25-gravity oil in 24 hours. Pipe was set at 3,356 ft. Operators were expected to drill out cement and test lower sand zones.

Wildcat Operations

Kirk-Green-Way, Inc.'s No. 1 Doran, NW NW SW Section 32-19-2e, wildcat northeast of the Ramsey pool, Payne County, topped dolomite at 4,815 ft., had first Wilcox sand at 4,835-51 ft., total depth, the sand was slaty and the well was dry and abandoned.

Another Payne County failure was recorded at C. F. Newsom's No. 1-A Jones, NE NE SW Section 15-18-3e. It found water in Wilcox sand at 4,242-52 ft., and was dry and abandoned at 4,254 ft., total depth. In Marshall zone.

Ed Kelly's No. 1 Hill, SW SW SE Section 1-21-5, Pawnee County wildcat, had a hole full of water and was abandoned in Wilcox sand at 3,366-70 ft., total depth.

Neff and others' No. 1 Brahma, NW NW SW Section 35-6s-2e, wildcat in Love County, was dry and abandoned at 3,012 ft., total depth. It found Sycamore formation at 1,555 ft., had oil stains at 1,555-80 ft., and a showing of oil at 1,580-90 ft. Hunton lime was topped at 2,142 ft., oolitic zone with a showing of oil at 2,319-30 ft., Sylvan shale 2,330 ft., and Viola lime 2,890 ft.

New wildcats include: Waco F. Turner's No. 1 Smith, NE SW SE Section 16-3s-1w, which had rig on ground and cellar and pits were being dug; it is located on a block of 3,500 acres in Sections 15, 16, 17, 21, 22, 27 and 28-3s-1w, northwest of Ardmore in Carter County, and is to be a 3,500-ft. test; Johnson's No. 1 Baker, C SE NW Section 35-2s-6w, south of Woolsey pool, Stephens County, rig; Youngblood's No. 1 Wright, NE NE SE Section 32-16-6, northeast of Skellyville pool, Lincoln County, spudded; Dannenberg's No. 1 Vann, NE NE NW Section 36-17-10, Creek County, location; B. & C. Co.'s No. 1 Burnett, NW SE NE Section 30-7-20w, near the Greer-Kiowa County line, east of the old Granite field, set 8-in. casing at 20 ft., waiting on cement.

Location for a wildcat in eastern Oklahoma was reported at Utilities' No. 1 well, C SE NW Section 27-8-20e, Kinta area, Haskell County.

The deep test being drilled in LeFlore County at LeFlore Electric & Gas Co.'s No. 1 Hickman, NE NE SE Section 8-8-25, was drilling below 5,930 ft. after setting 8-in. casing at 4,265 ft. The company's No. 2 Hickman, C S½ S½ Section 8-8-25, had spudded.

R. L. Kemp's No. 1-A Burke, NE SW NE Section 20-17-6, wildcat in northeastern Lincoln County, had Prue sand at 2,864-2,908 ft., total depth 2,910 ft., was shot in sand and was estimated good for 25 bbl. of oil daily, with 2,960,000 cu. ft. of gas. It had not been completed.

Estimated Daily Production

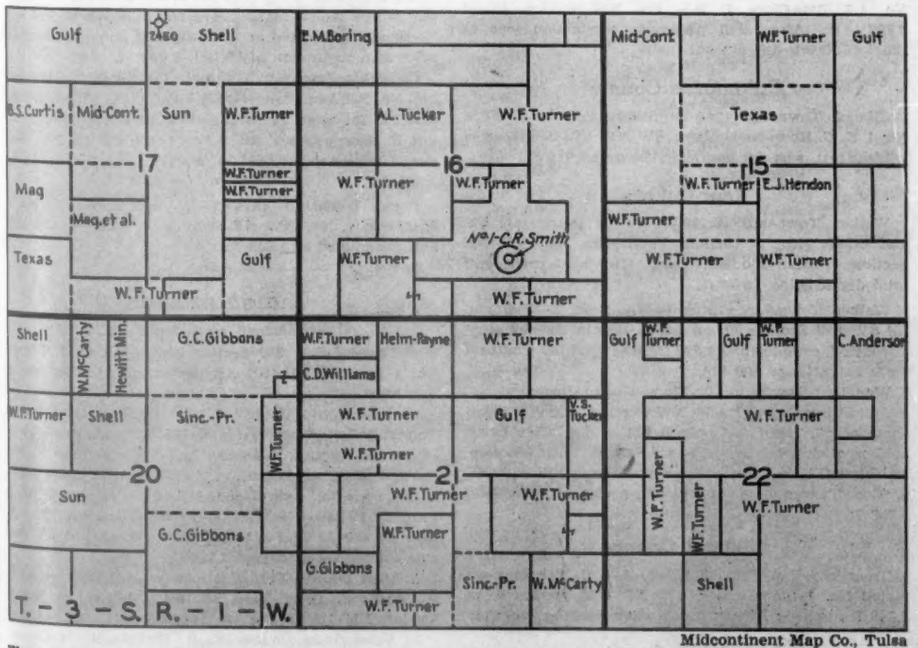
Estimated daily production for Oklahoma for the week ended November 4, and for the preceding week was as follows:

	Barrels	
	Nov. 4	Oct. 28
Allen	5,900	5,750
Billings	6,175	5,975
Burbank	7,225	7,150
South Burbank	9,350	9,100
Balance Osage	17,800	17,700
Blackwell district	3,550	3,350
Bristow-Slick	6,450	6,450
Chandler	1,450	1,425
Crescent	2,650	2,675
Cromwell	3,050	3,075
Cushing-Shamrock	9,325	9,300
Duncan	3,825	3,775
Edmond	4,475	4,350
Fish	4,025	3,950
Fitts	21,500	23,425
Jesse	2,225	2,225
Graham-Fox	2,875	2,975
Gray	750	725
Healdton	9,550	9,325
Hewitt	3,900	3,825
Keokuk	3,450	3,350
Konawa	1,100	1,100
Lucien	8,350	8,300
Moore	2,875	2,775
Oklahoma City	87,275	95,425
Olympic	2,675	2,550
Ramsey	4,875	4,825
Sasakwa	1,675	1,150
Sholem-Alechem	2,725	2,725
Seminole district:		
Bowlegs	7,025	7,025
Carr City	2,300	2,325
Dora	2,975	2,950
Earlsboro	4,275	4,225
South Earlsboro	525	500
East Earlsboro	2,625	2,650
Little River	6,175	6,175
East Little River	750	725
Maud	625	625
Mission	1,275	1,275
Seminole	6,750	6,725
East Seminole	1,150	1,175
Searight	2,150	2,150
Total Seminole	38,600	38,525
St. Louis-Pearson	31,150	31,100
Tatums	1,950	1,725
Tonkawa-Garber-Thomas	3,925	3,850
Wewoka	1,725	1,725
Yale-Jennings	3,375	3,350
Other pools	93,275	90,500
Total Oklahoma	415,050	419,500

Pottawatomie County

T. C. Iglehart's No. 1 Curley, NE SE NE Section

(Continued on Page 71)



Midcontinent Map Co., Tulsa

Waco F. Turner was due to spud at No. 1 Smith, NE SW SE Section 16-3s-1w, wildcat about 15 miles northwest of Ardmore, Carter County. Location is on a 2,500-acre block

Michigan Field Report

1939 Will Be Michigan's Busiest Year of Drilling

By O. C. PRESSPRICH

SAGINAW, Mich., Nov. 6.—Largely due to the letdown in the Walker field of Kent County, after the previous week's record list of completions in that area, the past week was a dull one in Michigan's oil fields, although more extensive wildcatting held the interest of operators.

Last week there were completions in 15 counties, a number of them being exploratory failures, and there was assurance that the search for oil will proceed on an even more extensive basis as the state Conservation Department issued permits for oil or gas drilling at 45 locations, biggest number for any week, by one.

Thirteen oil wells were completed, their total potential approximating 3,000 bbl. a day. Twelve tests were abandoned as dry. One small gas well was completed. Best of the new wells was a completion in Ottawa County's Tallmadge Township, which was good for 720 bbl. a day.

There were three oil completions in Allegan County but a wildcat test in Allegan Township was marked a failure when A. E. Kopprasch, trustee, abandoned No. 1 Schuler at 1,494 ft. W. R. Borough's No. 1 Shuck in Salem Township rated 600 bbl. a day, while Socony-Vacuum Oil Co., Inc., had two wells good for around 50 bbl. a day.

While Pure Oil Co. completed a moderate-sized well in Redding Township in Clare County, Taggart Brothers recorded a gas-test failure in Lincoln Township of Clare. Another development in the Central Michigan area was Leo Schrot's No. 1 State-Denton in Greendale Township, Midland County, completed at 3,549 ft., acidized and producing 50 bbl. a day. It is an edge test of the old Greendale field. The well is in Section 7. Schrot had another test near completion in Section 8, a mile east.

Kent County had only four completions, two in Walker, two in Wyoming Township, but one of the Wyoming tests rated only 6 bbl. a day after acid treatment. Twin Drilling Co. had the good well in Ottawa, but in Zeeland Township Freeman Oil Co. abandoned a wildcat test which failed to show after 1,700 ft. of drilling.

Van Buren County activity was confined to oil completions, one in Bloomingdale, one in Columbia, and two tests abandoned as dry holes, one in Columbia, the other in Porter.

Darke Brothers' No. 1 Butler, a wildcat test in Fremont Township of Saginaw County, was a failure, failing to log commercial possibilities in either Dundee or Monroe formations and being abandoned at a depth of 3,935 ft. Another unsuccessful wildcat in the northern part of the state for the C. L. Maquire No. 1 Russell Lake Club, Section 13, of Higgins Township, Roscommon County, abandoned at 1,025 ft. A Newaygo County test was unsuccessful as was another in Missaukee.

Meanwhile one of the farthest West Michigan tests, Tom McDaniel's No. 1 Berkey in Constantine Township of St. Joseph County, near the state line, also failed.

Of the week's 45 new permits, 13 are for wells to be drilled in Kent County, 9 in Ottawa County, 7 in Allegan, while the rest are scattered through 13 other counties, from the north central section to the far southwest part of the state. Among the wildcats scheduled is one in Grand Blanc Township of Genesee County, a new scene of activity.

The permits to drill brought the total for the year to 1,243, which is 347 more than for all of 1938. F. R. Frye, state Conservation Department petroleum engineer, predicted between 200 and 250 more before 1939 is over and pointed to the condition as a refutation of claims that proration and the state's oil-control law would decrease exploration.

The Conservation Department has 20,000 acres of wildcat oil and gas land up for auction in six counties—Roscommon, Alcona, Arenac, Wexford, Clare and Gladwin, and, in addition, was offering for lease 120 acres of proven land in Clare County, near the Freeman-Redding field.

Proration, which has decreased Michigan production the last 2 months, was reflected in a decrease of $3,000 in September severance tax collections, compared with August. The tax totaled $25,373 on a production of 1,892,147 bbl. of crude oil which sold at an average of just about $1 a barrel. Gas production, however, increased to 556,285,000 cu. ft., 106,000,000 cu. ft. more than in August. Following is a summary of last week's completions:

Allegan County

Allegan Township (2n-13w)—A. E. Kopprasch, trustee's No. 1 Charles Schuler, SE NE NE Section 13, abandoned as dry at 1,494 ft.

Salem Township (4n-13w)—After acid treatment, production initially was at the daily rate of 600 bbl. from W. R. Borough, Inc.'s No. 1 John Shuck, NW SW SW Section 2, total depth of 1,682 ft. Socony-Vacuum Oil Co., Inc., completed No. 1 Fred Wiest, NW SW NE Section 2, at 1,694 ft., and after treating it with acid got an initial production of 54 bbl. a day. Socony-Vacuum's No. 4 Felix Markulic, NW NE SE Section 15, rated 50 bbl. daily after an acid treatment, total depth 1,572 ft.

Arenac County

Clayton Township (20n-4e)—W. E. Ross completed No. 2 Marcus Kalander, C SE NW Section 10, as a gas well at 1,161 ft. Output was at the daily rate of 139,000 cu. ft.

Barry County

Maple Grove Township (2n-7w)—Strange Oil & Gas Co.'s No. 1 C. Morganthaler, NW NW NW Section 10, a wildcat, was abandoned as dry at 2,037 ft.

Clare County

Lincoln Township (18n-5w)—Taggart Brothers, Inc.'s No. 21 D. W. Frackelton, C SE¼ Section 18, failed as a gas test and was abandoned at 1,549 ft.

Redding Township (19n-6w)—Pure Oil Co. completed No. A-8 State-Clare, C W½ E½ NW Section 33, at 3,892½ ft. After acid treatment production was at the initial rate of 236 bbl. daily.

Kalamazoo County

Climax Township (3s-9w)—Smith Petroleum Co.'s No. 1 E. C. Rowe and others, SW NW SW Section 8, a wildcat test, was dry and abandoned at 1,416 ft.

Kent County

Walker Township (6n-12w)—Smith Petroleum Co. and others' No. 5 Amanda Thomasma, SW SW NE Section 4, rated 250 bbl. a day after acid treatment, total depth being 1,763 ft.

Walker Township (7n-12w)—No. 3 P. J. Taalman, SE SW SW Section 20, an Ide & Glavin Development Corp. well, completed at 1,873 ft., was good for a natural daily potential of 500 bbl.

Wyoming Township (6n-12w)—Hogan Brothers' No. 1 Alabastine Co., SW NW NW Section 2, got a small show of oil, but rated only 6 bbl. a day after being acid treated; total depth was 1,841 ft. Swanson Consolidated Oil Co.'s No. 1 Decker & Jean, SW NW SE Section 14, was good for 240 bbl. a day, after acid, at 1,893 ft.

Midland County

Greendale Township (14n-2w)—Leo J. Schrot completed No. 1 State-Denton, SW SE NW Section 7, at 3,549 ft., getting 50 bbl. a day after treating the well.

Missaukee County

Norwich Township (24n-5w)—Sun Oil Co.'s No. 1 Frank S. Horner, trustee, S½ SE SW Section 2, a wildcat test, was abandoned at 3,222 ft.

Monroe County

Dundee Township (6s-6e)—A nitroglycerin shot and an acid treatment were of slight benefit to A. V. Oil & Gas Co.'s No. 5 Frank Roe, NW SE NW Section 5, as production was only 5 bbl. a day. The well was completed at 2,137 ft.

Newaygo County

Bridgeton Township (11n-14w)—Charles D. Hoffman's wildcat No. 1 Dethmers-Comstock, NE SE NE Section 27, was dry and abandoned at 2,144 ft.

Ottawa County

Tallmadge Township (7n-13w)—Twin Drilling Co.'s No. 2 Park Association, NW SE NE Section 25, rated 720 bbl. a day after acidizing at 1,892 ft.

Zeeland Township (5n-14w)—Freeman Oil Co.'s No. 3 Gertrude Huyser and others, SE¼ Section 7, was abandoned dry at 1,700 ft.

Roscommon County

Higgins Township (23n-2w)—C. L. Maguire, Inc.'s No. 1 Russell Lake Club, C S½ SW NE Section 13, was another wildcat failure. The test was abandoned at a depth of 1,025 ft.

St. Joseph County

Constantine Township (7s-12w)—Tom McDaniel's No. 1 Lester A. Berkey, SW SW SW Section 16, was abandoned at 855 ft.

Saginaw County

Fremont Township (11n-2e)—Darke Brothers' No. 1 Louis Butler, NW NW NE Section 11, a wildcat, was unsuccessful, the operators abandoning it at 3,935 ft.

Van Buren County

Bloomingdale Township (1s-14w)—R. T. & E. Corp. and others' No. 4 Clinkenbeard and others, NW SW NW Section 7, completed at 1,221 ft., had daily production, after acid treatment, of 75 bbl. a day.

Columbia Township (1s-15w)—Consolidated Developer's No. B-3 Ada Ford, NE SE SW Section 12, completed at 1,203 ft., rated 150 bbl. a day, after acid treatment, but E. Roscoe Jones' No. 3 Fox heirs, NE SE NW Section 12, was abandoned as a dry hole at a depth of 1,216 ft.

Porter Township (4s-13w)—W. Spencer Cook's No. 1 H. Maloney, NW NW NE Section 16, likewise was dry and abandoned at 1,196 ft.

Indiana Fields

(Continued from Page 51)

west lines of W½ SW Section 24-22n-14e. H. J. Bime's No. 1 fee, SW cor. SE SE Section 22-24n-12e, was a location.

In Huntington County Claude Drilling Co.'s No. 2 Young, 125 ft. from east and 735 ft. from south lines of SE SW Section 21-26n-9e, had Trenton lime at 998 ft., and shot the formation with 20 qt. at 1,017-37 ft. It made a 4-bbl. well after the shot. R. L. Myers' No. 1 Cramer, C SW NW Section 29-26-9e, topped Trenton lime at 989 ft. and a showing of gas at 992 ft., and was abandoned as dry at 1,120 ft.

In Cass County Fred Eastman was drilling at 1,200 ft., with St. Peter sand as the objective in No. 1 Kistler, NE SE SE Section 11-28n-1w.

In Vanderburg County E. R. Bixby's No. 4 Glaser, SE cor. SW SW NW Section 31-5s-11w, was shot with 160 qt. at 1,175-1,222 ft., and made a 40-bbl. well.

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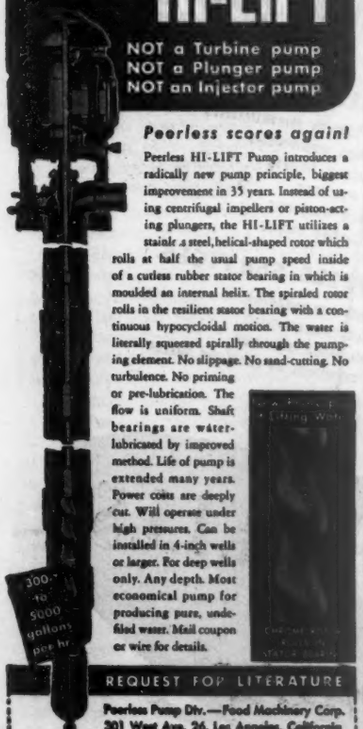

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Among the Drilling

JOHNSON-KEMNITZ Drilling Co., Oklahoma City, and McGraw Oil Co. are drilling below 3,150 ft. in the Viola lime at No. 1 Godfrey-Neff in SW SE NE Section 14-6s-6e, near Madill in Marshall County, Oklahoma.

M-B-K DRILLING CO. drilled No. 1 Gist in Section 9, Block 42, Township 2s, of T.P. Survey, on the northeast edge of the Foster pool in Ector County, Texas. The well flowed 1,444 bbl. a day after a 445-qt. shot. Total depth of the well is 4,323 ft.

FAIN DRILLING CO., Oklahoma City, is experiencing more difficulty on the deepest active test in the world, the Continental Oil Co.'s No. 1 Proctor, C SE NW Section 28-10n-20w, following sticking of the drill pipe 25 ft. off bottom, with the hole at a total depth of 14,582 ft. The test resumed drilling last week after squeeze cementing the top of the liner in stages and had made almost 42 ft. of new hole when circulation was lost and the bit became stuck. Attempts to back off at the safety joint were unsuccessful; the first time the pipe unscrewed at 3,200 ft. and the second time 366 ft. off bottom, one joint above the safety. Attempt to wash over the fish is being temporarily delayed by the safety joint, as it is slightly larger than the inside diameter of the washover string. The test was waiting for an inside mill to be delivered from Houston for the cutting away of the excess diameter of the safety joint. The hole is protected by a 7-in. liner to a total depth of 14,491 ft.

W. B. OMOHUNDRO, drilling contractor and independent operator of Wichita Falls, Tex., has been given the drilling contract for a deep wildcat test in northeastern Montague County, North Texas. It is Glen Grimes, D. R. Geagin, and Youngblood & Foree's No. 1 Mrs. W. L. Admire, located in the southeast corner of the center of 80 acres in the G. W. Fisher Survey, about 36 miles northeast of Bonita. Contract depth is 4,500 ft., which will carry it into the Ellenburger of lower Ordovician. Mr. Grimes, geologist of St. Jo, mapped the structure upon which the location was made.

KERLYN OIL CO., Oklahoma City, Okla., independent operator and drilling concern, has staked a 3,500-ft. Ellenburger-lime test in the northeastern part of Denton County, North Texas. The wildcat includes Dickson Oil Co., Sunray Oil Co., Anderson-Prichard, and others; however, it will be known as Kerlyn Oil Co.'s No. 1 Ida Mae Hallmark, 107-acre tract in the D. C. Cody Survey, 3 miles southwest of Pilot Point. The block was assembled by W. A. Henderson, of Oklahoma City, assisted by Henry Harrison, of Pilot Point.

POTTS DRILLING CO., Oklahoma drilling concern, has received contract from Floyd H. Scott, Fort Worth independent operator, for a new wildcat test in the Bunger district of Young County, North Texas. It is the operator's No. 1 W. J. Rhoades, 505 ft. from the south line and 861 ft. from the west line of the B. F. Kutch Survey, Abstract 1333, about three-quarters of a mile northeast of Bunger and about 5 miles south of Graham. Casing is on the grounds and operators have rigged up cable tools for immediate spudding. It is about 600 ft. east of an old abandoned oil producer from the Marble Falls lime.

HELMERICH & PAYNE, INC. Tulsa, is completing a 4,300-ft. producer which is a twin well to the discovery in the three-horizon Hull-Silk pool of Archer County, North Texas. Location is in Lot 11, Block 25, A.N.T.L.C. Survey, and the test is the operator's No. 11 Wilson. Oil sand was found in the lower producing horizon from 4,340 to 4,356 ft. and tubing was run for potential gage. The discovery well in the 3,800-ft. horizon was completed for 8,000 bbl. daily; however, the majority of the development since that date has been to the 4,300-ft. level.

UNGREN & FRAZIER, Abilene, Tex., operators and contractors in the West Central Texas district, have received the drilling contract from K. B. Nowels, of Abilene, for a 3,500-ft. test in the Pardue area of southern Haskell County. Production will be sought from the Canyon lime and the test is the operator's No. 1 Marie S. Pardue, SW cor. Section 1, S.F.I.W. Survey, 2,600 ft. north of the Jones County line. Several operators in the district have taken acreage in the 4,300-acre block. The area was worked with core-drill and surface surveys and it will be drilled with cable tools, spudding scheduled by November 19.

MARTIN THOMPSON is moving in a rotary to Fort Bend County, Texas, for a 6,500-ft. wildcat which will be drilled for Harold Link and others. The well is located south of the town of Needville on the R. S.

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Ross lease in the H.T.C. Survey, Section 63.

N. W. HUNTER has received contract from Temple Hargrove and others for an 8,000-ft. wildcat located on the W. A. Smith lease in Newton County, Texas.

NOBLE DRILLING CO. opened a new field in coastal Louisiana with the completion of California Co.'s No. 1 Adams-Rutley, located 11 miles south of New Orleans in Jefferson Parish. The well was drilled to a total depth of 12,222 ft., and was completed through perforated casing at 8,204-14 ft. flowing 7 bbl. per hour through a ⅛-in. choke.

PARKER DRILLING CO. is preparing to test Pan American Production Co.'s No. 1 Mills, a deep test located on the La Place prospect in St. John the Baptist Parish, coastal Louisiana. The hole is bottomed at 10,175 ft., and 7 in. casing was cemented at 10,120 ft.

GEORGE ECHOLS completed No. 1 Broussard, as the second oil producer in the South China field, Jefferson County, Texas. The well was completed in sand at 7,878-86 ft. for an initial production of 190 bbl. per day, flowing through a ⅛-in. choke. The well was drilled jointly with Hebert & Smith.

JOHN PUGH, Centralia, Ill., spudded in on a wildcat test to the Devonian lime in his No. 1 Kroeger, NW NW SE Section 28-3s-1w, Washington County, Illinois.

CRON & GRACEY have moved a rotary to the Seadrift area, Calhoun County, Texas, for Continental Oil Co.'s No. 1 Powderhorn, located near Port O'Connor.

ALLEN & MORRIS received contract from Seaboard Oil Co. for No. 4-A John LaPrelle, to be drilled in the North Luby field, Nueces County, Southwest Texas. In the La Rosa field one rotary is running for Coronado Corp., while in the Agua Dulce field two operations are reported for Process Oil Co. and Agua Dulce Oil Co.

CROW DRILLING CO., Shreveport, La., moved in an 87,000-lb. portable rotary rig at No. 1 Oscar Shores in SE¼ Section 12-60-37, Andrew County, Missouri. After setting 113 ft. of 8⅛-in. surface casing, drillers found base of the Kansas City at 620 ft., topped Bartlesville at 1,168 ft., and topped Mississippi at 1,533 ft. Derby Oil Co., owner of the block, has geologists at the well. A thinning of 40 ft. in beds between the base of the Kansas City and the top of the Mississippi caused operators to have hope for underlying structure.

KERR-LYNN DRILLING CO. and others' No. 1 College Park, NE NW SW Section 21-13-3w, south of the Orphanage extension well, Oklahoma County, Oklahoma, at total depth of 6,770 ft., was cleaning out into the pits and showing some oil.

Charles F. Logan, tool dresser, and Art Orr, driller, who were on duty at Pawnee Royalty Co.'s No. 1 Boice, Nebraska, when the first baller of oil was brought in

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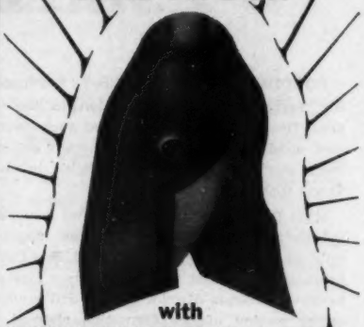

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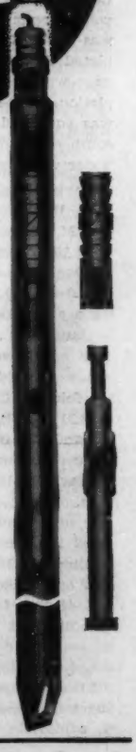

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Southwest Texas District

By
F. L. SINGLETON

Tertiary Wilcox May Extend to West Tuleta, Bee County

CORPUS CHRISTI, Tex., Nov. 4.—Prospects of opening Tertiary Wilcox production in the West Tuleta area, Bee County, overshadowed such developments as new sand discoveries and important extensions which were marked up for several fields in the Southwest Texas district the past week.

Mills Bennett Production Co. and Anderson-Pritchard Oil Corp.'s No. 1 D. E. Robinson, approximately ½ mile west of the West Tuleta field, Bee County, showed promise of opening the first Wilcox production in the Southwest Texas district as two drill-stem tests in the upper section of the formation showed pipe-line oil and several hundred pounds of working pressure. While the top of the Wilcox horizon had not been determined at the close of the week, the top of the sand section was logged at 7,531 ft., and the section was cored to 7,541 ft., where a 14-minute drill-stem test developed 305 lb. of working pressure and 8 ft. of 45.3-gravity oil. Another 10-ft. core was cut at 7,541-51 ft., and a second drill-stem test recovered 15 ft. of oil and 245 lb. of working pressure. At the end of the week, another 10-ft. core was being cut and a third drill-stem test was planned.

The showing has created widespread interest as the well is on the extreme south end of Wilcox trend, approximately 150 miles from the nearest Tertiary Wilcox production, which was first developed at the Clay Creek field in Washington County. It is interesting to note that the so-called Wilcox trend was originally referred to as the Pettus-Cockfield trend and was so named by development which originated in Bee County.

Location for another Wilcox test was made in Gonzales County by Continental Oil Co. for No. 1 J. J. Gatlin in the William Newman Survey. If the test fails to find production in the Wilcox, the hole may be deepened to the Edwards lime.

In the Cologne field, Victoria County, Houston Oil Co.'s No. 1 E. C. Dietzel was completed for a wet gas well to open a production from a new sand. This well was drilled to a total depth of 5,151 ft., and was completed through perforated casing at 4,826-32½ ft. No gage was available as the well was shut in after completion. Shut-in tubing pressure and casing pressure was equalized at 1,825 lb. The well is about 2,000 ft. south of production and was drilled deeper after salt water was logged in the 2,800-ft. sand.

An important extension was indicated for La Rosa field, Refugio County, as Morgan-Gulf Oil Corp.'s No. 1 J. M. Thomas, 1½ miles north of production, recovered 150 ft. of oil and 20 lb. of working pressure on a 20-minute drill-stem test at 6,257-60 ft. The hole was deepened to 6,521 ft. and casing is being cemented for a production test. Southwest of production, Hewitt & Daugherty's No. 3-A Rooke is coring below 5,900 ft. with no shows reported.

A new field in Jim Hogg County was indicated as Mayfair Oil Corp.'s No. 1 I. R. Gutierrez cored sand at 3,217-23 ft., and on an 8-minute drill-stem test recovered 300 ft. of oily mud. Casing is being cemented for completion. The well is located in the C. Gutierrez Survey No. 164, about 10 miles southeast of Hebronville.

A new sand and an important extension was indicated for the Clara Driscoll field, Nueces County, as Wellington Oil Co.'s No. 1-B Clara Driscoll, 4,000 ft. east of production, recovered 510 ft. of 24-gravity oil and 41 lb. of pressure on a 15-minute drill-stem test at 5,293-5,301 ft. After making the test sand showing oil was cored at 5,301-03 ft., and the well is drilling ahead. Location is in the J. Low Survey.

In the same county, 5½ miles southwest of the Saxet field, Jesse George staked location for an 8,000-ft. wildcat in Section 145, Delores A. & I. Co. Survey. The well is being drilled on a farmed-out lease from Texas Co. In the Robstown field, Fohs Oil Co. staked location for No. 1 Texas Rural Communities in the J. L. de Herrera grant. This is the first well started since the field was opened in August by Fred Shield's No. 1 Magee, completed as a distillate producer in Frio sand at approximately 5,500 ft.

In the Ben Bolt field, Jim Wells County, H. J. Mosser's No. 3 Percales, was completed in the 5,400-ft. sand for an initial production of 250 bbl. per day, flowing through a 7/16-in. choke. Tubing pressure was 1,300 lb. The hole is bottomed at 5,477 ft. and the completion was made through perforated casing at 5,419-23 ft.

Gravis & Buescher's No. 1 Lillian Mull, about 2,000 ft. northwest of the East Alice area, Jim Wells County, has been killed for recompletion, after the well showed for a gas well through perforated casing at 5,549-67 ft.

South of the Wade City field, Rodney DeLange and others reperforated casing at 4,788-91 ft. in No. 1 McNeill and the well is flowing gas through a ⅛-in. choke under a tubing pressure of 1,525 lb. and casing pressure 1,900 lb.

Hiawatha Oil & Gas Co.'s No. 3-A Southland Life Insurance Co. perforated casing at 5,355-63 ft., and was completed for an initial production of 138 bbl. per day, flowing through a 5/32-in. choke under a tubing pressure of 865 lb. and casing pressure 1,175 lb. Sand was cored at 5,345-62 ft., which is approximately 70 ft. deeper than the discovery well.

Three outpost tests in La Gloria field, Jim Wells County, were being watched closely. Magnolia Petroleum Co.'s No. 1 Rust, approximately ½ mile southwest of production and in Brooks County, is drilling below 6,000 ft. after a 30-minute drill-stem test at 5,980-88 ft. recovered 200 ft. of salt water. The same company's No. 1 Stolze is drilling at 7,025 ft., while No. 1 Hornsby is drilling at 5,915 ft.

In Aransas County Continental Oil Co.'s No. 1 St. Charles, a projected 10,000-ft. wildcat 7 miles northeast of Lamar, is bottomed at 8,368 ft., and a protection string of 9⅝-in. casing is being cemented.

In the Rincon field, Starr County, W. R. Davis Co.'s No. 3-B Slick is shut down for orders after drill-stem testing through perforated casing at 3,840-46 ft. showed salt water. The well is located in the A. L. Trutt Survey No. 232.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

Aransas-San Patricio Counties

McCampbell field: Bay-Tex Oil Corp.'s No. 1 Kennedy-Young, 7,178 ft., 178 bbl., ⅝-in. choke. S. E. W. Oil Co.'s No. 2 Davidor-Harris, 7,216 ft., 184 bbl., ⅞-in. choke.

Caldwell County

Luling field: Ruby Oil Co.'s No. 2 Putnam, 2,092 ft., 4 bbl. oil, 31 bbl. salt water, pumping. Salt Flat field: Wiegand Brothers' No. 9-A Briscoe, 2,290 ft., 108 bbl., ¼-in. choke. Walnut Creek field: Chapman Minerals Corp.'s No. 1 Ray, 1,679 ft., dry and abandoned.

Duval County

Driscoll field: Continental Oil Co.'s No. 40-A Driscoll, perforated casing 3,345-56 ft., 196 bbl., ¼-in. choke. Fitzsimmons field: J. B. Cutbirth's No. 2 Hinojosa, perforated casing 3,530-38 ft., 85 bbl. fluid, 25 per cent salt water, ⅞-in. choke. Hoffman field: Magnolia Petroleum Co.'s No. 48 Well, 2,840 ft., 15 bbl., pumping. Piedra DeLumbre field: Magnolia Petroleum Co.'s No. 41 Duval County Ranch Co., sand 2,132-40 ft., 545 bbl., jetting. Rancho Solo field: Cox & Hamon's No. 4 Peters, perforated casing 1,865-68 ft., 40 bbl., pumping. Seven Sisters field: Pan American Production Co.'s No. 11-A Welder, sand 2,532-38½ ft., 200 bbl., ¼-in. choke. Harvey & Henderson's No. 1-B Drummond, sand 1,313-55 ft., gas well.

Guadalupe County

Darst Creek field: Humble Oil & Refining Co.'s No. 8 Wilson, 2,633 ft., 50 bbl. oil, 150 bbl. water, pumping.

Hidalgo County

Samfordyce field: R. S. Dean's No. 3-C Guerra, 2,165 ft., dry and abandoned.

Jim Hogg-Brooks Counties

Kelsey field: Humble Oil & Refining Co.'s No. 29 McGill, 4,730 ft., 102 bbl., 7/64-in. choke. Colorado field: K. D. Harrison's No. 2-A Trevino, 3,062 ft., 60 bbl., 3/32-in. choke.

Jim Wells County

Ben Bolt field: H. H. Howell's No. 1 Muzzy, perforated casing 5,198-5,226 ft., 147 bbl., ⅛-in. choke. Reynolds field: Tom Graham's No. 2-B Mosser, perforated casing 5,145-50 ft., 124 bbl., ⅛-in. choke. Texas Gulf Producing Co.'s No. 7-A Miller, perforated casing 5,152-55 ft., 165 bbl., 7/64-in. choke.

Medina County

Chacon Lake field: A. A. Murrell's No. 10 fee, sand 380-87 ft., 2 bbl., pumping. Dunlay field: Shamrock Oil Co.'s No. 1 Haby, 200 ft., dry and abandoned. Ina field: Medina Production Co.'s No. 10 M. Schmidt, sand 928-51 ft., 25 bbl., pumping.

Nueces County

South Clara Driscoll field: Wellington Oil Co.'s No. 4 Richardson perforated casing 6,610-24 ft., 199 bbl., 5/32-in. choke. Luby field: Sun Oil Co.'s No. 10 McCann, perforated casing 5,060-63 ft., 82 bbl. oil, 20 bbl. salt water, ⅛-in. choke. Minnie Bock field: Stanolind Oil & Gas Co.'s No. 1 Parr, sand 3,810-20 ft., 69 bbl. oil and 6 bbl. salt water, ⅛-in. choke. Texas Conservative Oil Co.'s No. 3-A Bock, perforated casing 3,812-15 ft., 109 bbl. fluid, 5 per cent salt water, 11/64-in. choke.

Refugio County

La Rosa field: Coronado Corp.'s No. 23 Rooke, 5,910 ft., 157 bbl., ⅛-in. choke. Tomoconnor field: Quintana Petroleum Corp.'s No. 10 Heard, perforated casing 5,848-55 ft., 585 bbl., ¼-in. choke.

San Patricio County

East White Point field: Allen & Morris' No. 3 Baldwin, perforated casing 5,611-23 ft., 180 bbl., ⅛-in. choke. Plymouth Oil Co.'s No. 1 Heinman-Neff, perforated casing 5,638-54 ft., 162 bbl., 7/64-in. choke. Plymouth Oil Co.'s No. 1-A Mayo-Koonce, perforated casing 5,638-64 ft., 120 bbl., 7/64-in. choke. Texas Co.'s No. 2 Speer, perforated casing 5,665-74 ft., 101 bbl., ⅛-in. choke. Fred Wood's No. 1 Kellum and Roper, perforated casing 5,623-28 ft., 133 bbl., ⅛-in. choke.

Starr County

Rincon field: W. R. Davis Co.'s No. 1-A Slick, 4,829 ft., dry and abandoned. Sun Oil Co.'s No. 1 Lyons and Stevens, 4,773 ft., dry and abandoned.

Zapata County

Escobas field: Dulup Oil Co.'s No. 4 Trevino, sand 1,341-49 ft., 62 bbl. oil and 22 bbl. salt water, pumping. Mirando Valley field: Buffalo Oil Co.'s No. 1-E Hinnant, 2,262 ft., dry and abandoned.

West, Central and Panhandle Texas

By
D. H. STORMONT

North Offset to Apco Misses Lower Ordovician Lime Pay

MIDLAND, Tex., Nov. 6.—Continued activity in the relatively undeveloped Seminole pool in Gaines County, together with a possible failure at a half-mile north outpost to Pecos County's recently discovered Apco (Ellenburger of lower Ordovician) pool, were the important features of an active week in West Texas. New locations again exceeded completions in the area, there having been 56 new sites staked and only 29 new wells completed. There were six dry holes registered in the district during the week, making a total of 35 completions.

Continuing the development in the central part of Gaines County's Seminole pool and between the pool proper and the 4-mile-northwest extension area, Texas Pacific Coal & Oil Co. and Humble Oil & Refining Co., jointly, made location for No. 1 T. H. Hahn. The test is an east offset to the recently completed Ohio Oil Co.'s No. 1 Gibbs, 973-bbl. producer, 1 mile north of the pool proper. The test will be drilled 660 ft. from the south and 1,933 ft. from the east lines of Section 230, Block G, W.T. Survey. In the northwest extension area of the field Amerada Petroleum Co.'s No. 1-A Riley, NW cor. S½ Section 249, was drilling below 2,070 ft. East fo the pool proper Magnolia Petroleum Co.'s No. 2 H.&J., Section 219, Block G, west offset to Amerada's No. 1 Robertson, which was a mile-east extensioner, was drilling below 2,346 ft. The field now embraces some 10,000 acres and has been defined only on the west and the extreme north sides. There are 18 oil producers and one gas well in the field. A pipe line is being planned to the Colden refinery at Big Spring, some 80 miles southeast, but the project as yet is in the formative state.

The ever-active Wasson-Bennett pool in Gaines and Yoakum counties reported a quarter-mile-west extension and a large lease deal during the week. A quarter of a mile west of the south end of the Bennett area in the field, Mid-Continent Petroleum Corp.'s No. 2 Comer, Section 760, topped the pay at 4,995 ft. and was drilling in lime at 5,090 ft. Entry of the Plymouth Oil Co. (Benedum & Trees, Pittsburgh, Pa.) was seen during the week when it purchased several leases and wells in the field. The acquired holdings were formerly the possession of C. J. (Red) Davidson, H. H. Brewster and Cascade Petroleum Co. and were in the Bennett area of the field. Plymouth was reported to have paid $250,000 cash with an additional $918,000 to be paid out of oil; however, the consideration could not be confirmed. The purchase included two oil wells and 1,040 acres of proven leases which lie to the north, east and west of the Bennett pool. It is understood that Plymouth plans immediate development of the properties.

South Basin Area

A possible failure at a slightly less than a half-mile-north outpost to Pecos County's recently opened Apco pool was indicated as the week closed. Anderson-Prichard Oil Co. and Monte Warner's No. 2 Masterson, in Section 104, Block 10, H.&G.N. Survey, was fishing for drill pipe in a formation identified as schist. Total depth is 4,633 ft. and believed near granite. The outpost missed the Ellenburger section, as it had been drilling in a detrital zone the when the schist was encountered. The detrital zone was topped 30 ft. higher than in the discovery well by the same operators, and it is believed the Ellenburger section was missing on top of the higher foundation rock of the area. In the pool proper, which is composed of two wells, Childress Royalty Co. is drilling below 4,385 ft. in No. 1 Masterson, Section 104. Eight miles northwest of the Apco area, Humble Oil & Refining Co. was rigging up rotary for No. 1 Mrs. Bertha D. Young, 660 ft. from the northwest and 1,980 ft. from the southwest lines of Section 33, Block 10, H.&G.N. Survey. The recently staked McCandless and Olson Drilling Co.'s No. 1 Mrs. Virginia W. Crockett, southwest part of Section 5, Block 110, T.C. Survey, 2 miles southwest of the Apco field, was also rigging up.

Holding the interest in Ector County was the Indian Territory Illuminating Oil Co.'s No. 1-B Johnson, Section 39, Block 43, T.&P. Survey, a wildcat ½ mile southeast of Sloan & Zook and others' No. 1 Johnson, wildcat oil well which indicated a link between the Foster and the North Cowden pools in the county. No. 1-B Johnson encountered salt water at 4,182-85 ft. and was last reported preparing to complete from a plugged-back depth of 4,178 ft., where the well headed four times daily while drilling. It was estimated to have headed 100 bbl. of oil daily with an estimated 500,000 ft. of gas. The completion of this well will further indicate the possibilities of linking these two large Ector County pools.

Crane County's Sand Hills field received a mile east outpost location when Humble Oil & Refining Co. staked No. 33 Tubb ranch, 440 ft. from the east and 1,760 ft. from the south lines of Section 7, Block 32-B, P.S.L. Survey. Road is being built to the location and rig will be moved in after completion of the company's No. 32 Tubb, Section 10, which is drilling below 2,813 ft.

WEST TEXAS COMPLETIONS
(24-hour gages)

Andrews County

In the Emma pool Adams & Bradley's No. 2 University, 4,235-4,312 ft., 1,256 bbl. Anderson-Prichard Oil Corp.'s No. 7 Cowden, 4,210-4,312 ft., 1,226 bbl.

Crane County

In the McElroy pool Gulf Oil Corp.'s No. 202 McElroy, 2,735-2,912 ft., 679 bbl In the Waddell pool, Gulf Oil Corp.'s No. 11 Waddell, 4,423-4,680 ft., 97 bbl.

Ector County

In the Goldsmith pool Gulf Oil Corp.'s No. 224 Goldsmith, 4,131-86 ft., 1,743 bbl. Gulf Oil Corp.'s No. 227 Goldsmith, 4,146-4,206 ft., 1,716 bbl. Gulf Oil Corp.'s No. 228 Goldsmith, 4,116-81 ft., 828 bbl. In the Foster pool M.B.K. Drilling Co.'s No. 6-A Gist, 4,209-4,323 ft., 1,144 bbl. Sunray Oil Co.'s No. 3-B Witcher, 4,051-4,218 ft., 922 bbl. In the North Cowden pool Stanolind Oil & Gas Co.'s No. 19 Roberts, 4,280-4,525 ft., 1,063 bbl. Tide Water Associated Oil Co. and Edson's No. 3 Roberts, 4,360-4,480 ft., 861 bbl.

Gaines County

In the Seminole pool Amerada Petroleum Corp.'s No. 1 E. Auten, 5,200-5,372 ft., 442 bbl. Osage Drilling Co.'s No. 2-A Tippett, 5,070-5,318 ft., 745 bbl.

Howard County

In the Snyder pool F.H.E. Oil Co.'s No. 2 D. H. Snyder, 2,674-2,855 ft., 205 bbl. M. L. Richards' No. 1 Read, dry and abandoned at total depth of 2,977 ft. Sinclair Prairie Oil Co.'s No. 64 Dodge, junked and abandoned at total depth of 1,455 ft. Loving's No. 1 J. S. Watson, dry and abandoned at total depth of 4,305 ft.

Scurry County

In the Sharon pool Magnolia Petroleum Co.'s No. 2 McClure, 2,240-2,430 ft., 223 bbl.

Pecos County

In the Tobarg area Cardinal Oil Co.'s No. 55-E Tippett, 521-538 ft., 14 bbl. In the Yates pool Ohio Oil Co.'s No. 19-H Yates, 1,595-1,837 ft., 647 bbl. A wildcat, Trans-Pecos Oil Co.'s No. 1 Popham, dry and abandoned at total depth of 5,337 ft. C. S. Messenger's No. 1 Scharff-Blackmon, dry and abandoned at total depth of 1,937 ft.

Upton County

N. A. Moore's No. 1 A. M. Mayhew, dry and abandoned at total depth of 1,863 ft.

Ward County

In the Estes pool Gulf Oil Corp.'s No. 124 Estes, 2,519-2,670 ft., 993 bbl.

Yoakum County

In the Wasson-Bennett pool Aloco Oil Co.'s No. 7-A A. Miller, 4,840-5,159 ft., 1,253 bbl. Argo Oil Co.'s No. 2-A Comer estate, 4,985-5,210 ft., 1,296 bbl. Humble Oil & Refining Co.'s No. 21 Wooten, 4,942-5,120 ft., 961 bbl. Magnolia Petroleum Co.'s No. 3-867 Kendrick, 4,900-5,130 ft., 1,687 bbl. Oil Development Co. of Texas' No. 1,763 fee, 4,980-5,215 ft., 671 bbl. Oil Development Co. of Texas' No. 3-801 fee, 4,990-5,215 ft., 1,754 bbl. Shell Oil Co., Inc.'s No. 6-A Baumgart, 4,850-5,172 ft., 1,038 bbl. Shell Oil Co., Inc.'s No. 4-E Baumgart, 4,830-5,177 ft., 982 bbl. Sinclair Prairie Oil Co.'s No. 4-A Kendrick, 5,063-5,150 ft., 1,744 bbl. Skelly Oil Co.'s No. 3 Rhodes, 4,950-5,065 ft., 610 bbl. Tide Water Associated Oil Co.'s No. 1 Campbell & Posey, 4,990-5,070 ft., 1,154 bbl.

WEST CENTRAL TEXAS

FORT WORTH, Tex., Nov. 6.—Routine drilling of several closely watched wildcat and field-extension tests marked a rather uneventful 7-day period in the West Central Texas district.

Several recently opened pools centered considerable attention as outpost tests neared critical points. Completion of a good well in the Stribling pool of Stephens County and the drilling of two other tests in the Caddo-lime area were reported for that district. Horwitz & Oldom's No. 2 B. S. Dance, Koehler Survey, flowed 656 bbl. of oil in 8 hours on official gage to extend the pay limits 900 ft. northwest from the discovery well. The same operators are active at two other wells in the pool, one being No. 2 Murry, Koehler Survey, which is nearing the pay in drilling at 3,500 ft. Rig is up for No. 1 T. J. Hawley, on the south of the field and in the J. T. Thomas Survey.

Once-active Jones County listed two official abandonments during the week. A. H. Tarver abandoned No. 1 A. S. Barkley, Section 54, Deaf and Dumb Survey, 3 miles northeast of Anson, at a total depth of 5,436 ft. with no oil showing reported. Hickok & Reynolds have quit No. 1 C. W. Williams estate, southeast corner of Section 24, Deaf and Dumb Survey, at a total depth of 3,385 ft. after finding sulfur water in the Palo Pinto formation.

Considerable interest is being shown in a deep test in Erath County. It is Wayne Chandler and others' No. 1 Chandler, J. W. Moore Survey, 8 miles northeast of Stephenville. Drilling below 5,075 ft., it is projected to the Ordovician level at around 5,150 ft. Operations were recently resumed after a several weeks' fishing job at 4,794 ft.

Young County was given a new wildcat during the week when Floyd H. Scott, Fort Worth, staked No. 1 W. J. Rhoades, B. F. Kutch Survey, Abstract 1333, about 1 mile northeast of Bunger and approximately 5 miles south of Graham. It is contracted to the Marble Falls lime which produced in a nearby test back in 1923. Cable tools have been rigged up and spudding is scheduled for the first of the week.

The third producer was in the completion stage for the Morris pool on the large Morris ranch in Coleman County. Anzac Oil Corp. and R. D. Semmes topped the

(Continued on Page 76)

7 RECYCLING *have chosen*

WORLD'S LARGEST RECYCLING PLANT in operation. Corpus Christi Corporation, Stratton Field, Texas. Now equipped with 5 600-H.P. CLARK "Angles."

5 800-H.P. "ANGLES" — TOTAL 4000 H.P. in what will be world's largest recycling plant, Coastal Recycling Company, Agua Dulce Field, Texas.

PLANTS . . .
CLARK "ANGLES"

Largest Plant in Operation— 3000 H.P.—CLARK Equipped

Largest PROJECT—4000 H.P.— Also Will Be CLARK Equipped

The process of distillate extraction and recycling of high-pressure gas has been one of the major developments in the oil industry, in the past 2 years. Of the distillate plants that have been constructed and placed in operation, in this period, 7 have selected CLARK "Angles" as compressor equipment.

The largest such plant at present in operation (see opposite page), has just installed its fifth CLARK 6-cylinder, 600 H.P. "Angle," and now totals 3000 H.P. of CLARK "Angles."

And the largest projected plant in this field, which will have a capacity of 140,000,000 cu. ft. of gas (see opposite page), will be equipped with five 8-cylinder, 800 H.P. CLARK "Angles," totalling 4000 H.P.

This is just a small part of the success story of the CLARK "Angle," in its first three years on the market. In this period a new compressor sales record has been achieved, of over 100,000 H.P. sold. This success has been attributable to unsurpassed mechanical efficiency, proven reliability, and to these 4 important savings, introduced by this machine: (1) Reduced Transportation and Erection Costs, due to shipment assembled; (2) Smaller Foundation, Floor Space, Building, due to compact design; (3) One-third Fuel Saving, due to CLARK Super-2-Cycle Fuel Injection; (4) Lowest Maintenance, due to simplicity of design and few parts.

Investigate fully. Our nearest office is at your service.

CLARK 5-cylinder, 500-H.P. "Angle," in recycling service, Anco Gas Corporation, Byrd-Frost Plant, Palestine, Texas.

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CLARK 6-cylinder, 600-H.P. "Angle," in recycling service for Portex Oil Company, near Joaquin, Shelby County, Texas.

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CLARK

California Field Report

By
L. P. STOCKMAN

Critical Stage in Depth of Rio Bravo Outposts Close

LOS ANGELES, Calif., Nov. 6.—Two wells, No. 1 Sullivan of General Petroleum Corp. and No. 1 Weber of Superior Oil Co., occupied prominent places in the spotlight during the past week, and both are expected to be given production tests within the next few days. The former, located about midway between the Rio Bravo and Greeley fields in Kern County, is bottomed at 11,386 ft. and has a string of 6⅝-inch casing cemented with 1,600 sacks of cement at 11,325 ft. It cored 59 ft. of good looking oil sand in the Rio Bravo formation and the bit was still in the pay when drilling operations were concluded. It is the general belief that the well is at the extreme southeastern end of the Rio Bravo field. General Petroleum Corp. has staked location for No. 1 Farrand about 1,200 ft. northwest of No. 1 Sullivan in Section 12-29-25. Only one dry hole has been drilled in the southeastern end of Rio Bravo and that well, No. 1 Helbling of Superior Oil Co., drilled through a fault. The direction and hade of this fault may exert a pronounced effect on structural conditions east and south of No. 1 Sullivan which is located 1½ miles southeast of the present proved limits of production.

In the extreme northwestern end of the Rio Bravo field in Section 27-28-25, Superior Oil Co. has hit the pay in No. 1 Weber, with bottom of the hole at 11,197 ft. and has cemented a string of casing preparatory to making an early production test. This well is 1,000 ft. northwest of production in the Rio Bravo field. No. 1 Weber is northwest of No. 1 Burner of the same company which to date is the highest producing well structurally in the field. No. 1 Weber is slightly lower on the structure, although the top of the pay places it as the second highest structurally in the field. The logging of oil sand in No. 1 Weber by Superior Oil Co. has resulted in the construction of a new derrick for No. 2 Fink in Section 27-28-25, and will probably lead to the starting of a new well by Union Oil Co. in the same area. In the center of the Rio Bravo field, Union Oil Co. has logged top of the pay in No. 41-34 Kern County Land in Section 34-28-25, and will shortly have two additional wells under way. The starting of development work by Superior Oil Co. on the Smith property in the same section will make it necessary for Union Oil Co. to drill several offsets, the exact number depending upon the number drilled by Superior Oil Co. on its 80-acre lease. The Rio Bravo field has only produced a limited amount of crude oil up to the present due to strict curtailment of production by all operators who recognize they have a valuable reserve and are desirous of preserving this advantage by keeping gas pressure at the highest possible level.

Wilmington

In the Wilmington field of Los Angeles Basin Union Pacific Railroad Co. completed two wells, Nos. 118 and 120, the former flowing 565 bbl. of clean 23.9-gravity oil daily from 3,611 ft. and the latter finished flowing 1,046 bbl. of clean 30.8-gravity oil per day from 4,021 ft. No. 118 was carried down to 3,678 ft. and then plugged back because of bottom water at 3,611 ft. No. 120 was finished with an 11¾-in. water string cemented at 2,624 ft. and a combination 6⅝-in. and 8⅝-in. liner landed at 4,021 ft. and cemented through perforations at 3,104 ft. and 3,610 ft.

No. 4 S.P. of Signal Oil & Gas Co. completed at 4,172 ft. was finished flowing 125 bbl. of 18.6-gravity oil cutting 10 per cent from the Ranger zone and 350 bbl. of 25.6-gravity oil cutting 3 per cent daily from the Terminal zone. Production from the Ranger zone was produced through a 25/64-in. bean and output of the Terminal horizon was coming through a 20/64-in. bean. Roy Morgan completed No. 1 Ruth flowing 130 bbl. of 14.7-gravity oil cutting 2 per cent daily from 3,350 ft. C. L. McWherter's No. 3-4 Channel Community was completed pumping 76 bbl. of 15.2-gravity oil from the Ranger zone with bottom of the hole at 3,098 ft. The hole was finished with an 8⅝-in. water string cemented at 2,798 ft. and 340 ft. of 5½-in. gravel-packer liner landed at 3,098 ft. and 2,790 ft. of 2½-in. tubing.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

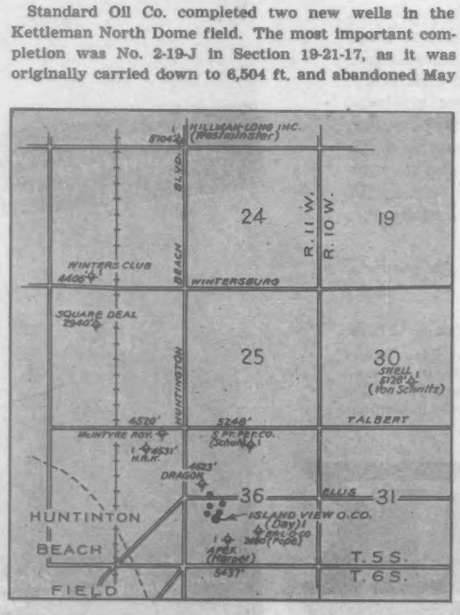
	October 28 Total this week	October 28 Daily average	October 21 Total last week	October 21 Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	.....	.....	86,160	12,309	857,366	852,826
Fuel oil	.....	.....	137,768	19,681	1,956,841	.....
Diesel and gas oil	.....	.....	.....	.....	163,501	.....
Gasoline	153,653	21,950	176,314	25,188	3,048,371	2,631,841
Kerosene	30,347	4,335	.....	.....	225,197	333,626
Foreign exports—						
Crude oil	182,329	26,047	384,673	54,953	12,408,499	18,153,963
Fuel oil	123,797	17,685	51,329	7,333	7,444,495	7,619,348
Diesel and gas oil	174,736	24,962	331,034	47,291	7,465,352	5,118,356
Gasoline	52,599	7,514	198,646	28,378	6,354,010	6,598,202
Kerosene	115,068	16,438	77,983	11,141	1,506,140	896,166
Lubricants	19,488	2,784	18,311	2,616	165,166	175,560
Coastwise-domestic—						
Crude oil	215,380	30,769	150,212	21,459	10,379,301	9,899,935
Fuel oil	194,399	27,771	214,606	30,658	8,756,499	10,127,072
Diesel and gas oil	35,377	5,054	60,387	8,627	1,923,820	1,297,149
Gasoline	303,117	43,302	289,709	41,387	13,975,808	12,302,967
Kerosene	30,284	4,326	18,697	2,671	475,840	210,640

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Fuel oil	.....	.....	.....	.....	124,055	.....
Diesel and gas oil	.....	.....	84,194	12,028	153,744	196,644
Gasoline	.....	.....	.....	.....	43,235	25,409
Kerosene	.....	.....	.....	.....	100,507	16,124
Asphalt	.....	.....	.....	.....	425,845	490,039
Lubricants	.....	.....	.....	.....	24,870	19,945
Foreign exports—						
Crude oil	150,926	21,561	235,530	33,648	4,556,185	4,588,646
Fuel oil	91,003	13,000	51,213	7,316	2,635,295	2,261,553
Diesel and gas oil	137,785	19,684	.....	.....	2,323,714	2,562,190
Gasoline	85,733	12,248	.....	.....	2,835,325	4,726,537
Kerosene	.....	.....	22,872	3,267	554,589	696,099
Asphalt	.....	.....	.....	.....	14,151	56,258
Lubricants	47,173	6,739	7,513	1,073	521,563	485,567
Other finished oil	.....	.....	230	33	699	.....
Coastwise-domestic—						
Fuel oil	60,218	8,603	86,210	12,316	5,453,068	5,142,170
Diesel and gas oil	26,905	3,844	40,445	5,778	1,108,800	1,319,304
Gasoline	120,406	17,201	136,887	19,555	6,772,531	6,639,948
Kerosene	20,167	2,881	40,214	5,745	792,048	516,846

Kettleman Hills

Standard Oil Co. completed two new wells in the Kettleman North Dome field. The most important completion was No. 2-19-J in Section 19-21-17, as it was originally carried down to 6,504 ft. and abandoned May 1,1937. Operations were resumed June 10. 1939, and the well completed this week flowing 335 bbl. of 38.9-gravity oil and 6,667,000 cu. ft. of gas per day from the Eocene at 10,950 ft. Production was through a 1-in. bean behind a tubing pressure of 1,150 lb. and a casing pressure of 3,800 lb. The hole was finished with a string of 9⅝-in. casing cemented at 9,096 ft., 6⅝-in. casing cemented at 10,677 ft., and 308 ft. of 4¾-in. liner perforated at 10,677-10,945 ft. No. 61-27-Q of Standard Oil Co. was completed in the Temblor flowing 1,341 bbl. of clean 36.1-gravity oil per day through a 48/64-in. bean from a depth of 8,413 ft. The hole was finished with 11¾-in. casing cemented at 5,525 ft. and a string of 9⅝-in. casing cemented at 6,944 ft. with 1,531 ft. of 6⅝-in. liner landed at 8,410 ft. and perforated at 7,050-78 ft., 7,101-80 ft., 7,301-46 ft., 7,373-91 ft., 7,566-92 ft., 7,748-91 ft., 7,834-74 ft., 7,966-8,032 ft., 8,072-8,380 ft. ft. The 7,670 ft. of 3-in. tubing had a packer at 7,635 ft. Standard has staked location for No. 321-29-J in Section 29-21-17, a projected Eocene test out in the west end of the structure in the Huffman area but has not yet put material on ground. In the meantime, Superior Oil Co. has reached a depth of 9,350 ft. in No. 4 Huffman, a former Temblor producer which is being deepened to the Eocene for recompletion. This work will probably make it necessary for Union Oil Co. to deepen at least one well into the Eocene although at present this company will not gain any advantage as all of its wells in the Temblor are capable of producing the maximum allowable. It is usually customary, however, to offset well for well and thus Union Oil Co. may decide to deepen its first well to the Eocene in the near future. Up to date Eocene production has been limited to Superior Oil Co., Standard Oil Co. and Kenda.

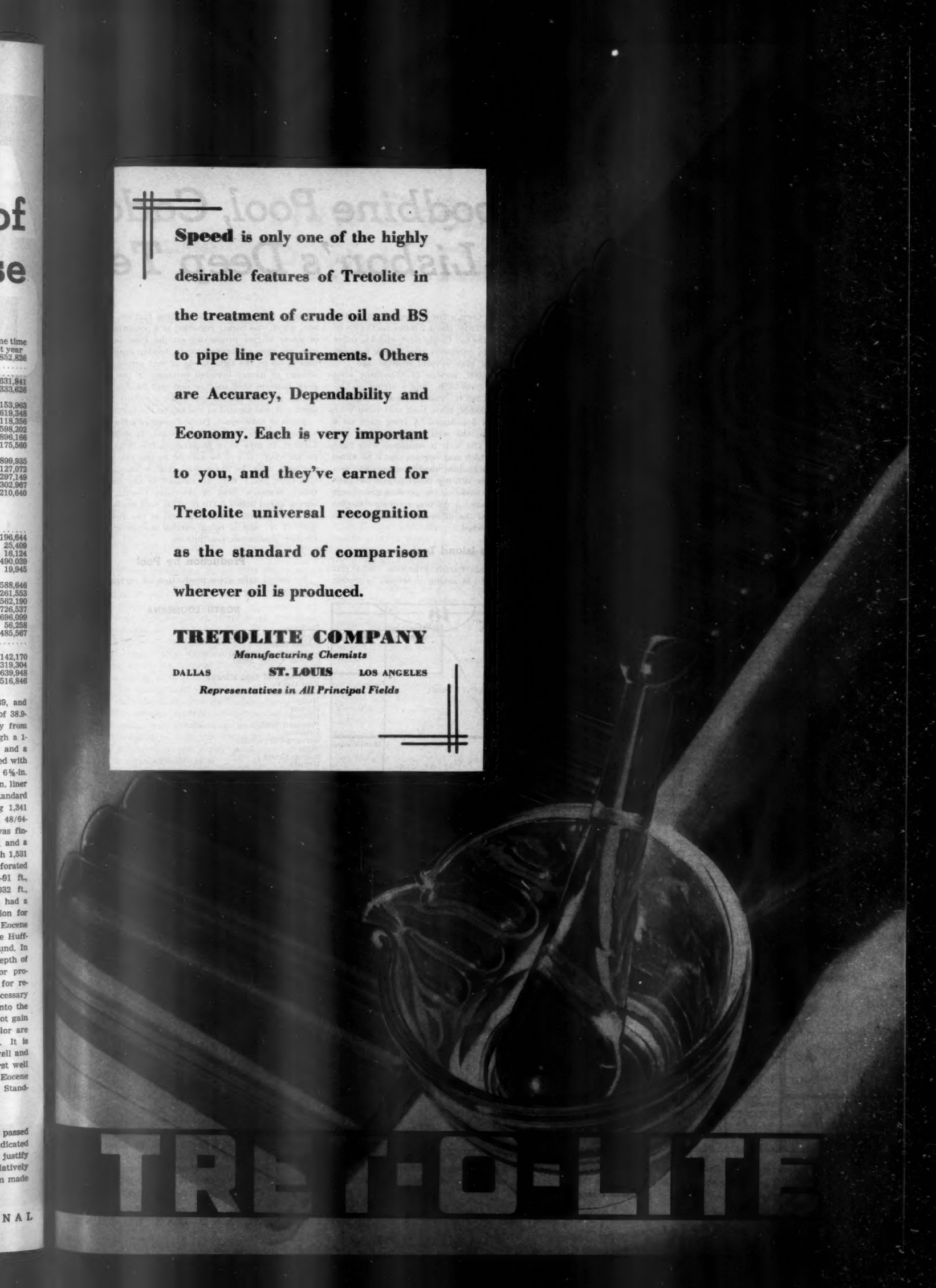


The 5 Points section, outside the productive area in the east end of the Huntington Beach field, is showing a revival of drilling due to the recent completion of No. 1 Day of Island View Oil Co. pumping 15 bbl. per day from 4,327 ft.

Montebello

Although the peak of development has been passed in the Montebello extension, operators have indicated their intention of drilling enough new wells to justify the expectation that this field will continue relatively active for several months. No move has yet been made

(Continued on Page 70)


Speed is only one of the highly desirable features of Tretolite in the treatment of crude oil and BS to pipe line requirements. Others are Accuracy, Dependability and Economy. Each is very important to you, and they've earned for Tretolite universal recognition as the standard of comparison wherever oil is produced.
TRETOLITE COMPANY
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Representatives in All Principal Fields
TRETOLITE

North Louisiana, Arkansas

By
GEORGE WEBER

New Woodbine Pool, Caddo Parish; Lisbon's Deep Test

SHREVEPORT, La., Nov. 6.—Lisbon Exploration Co.'s deep test in the Lisbon field continued to hold interest in the tri-state area in the past week, as casing was set in the deep hole, and arrangements were made to test oil and gas-condensate showings in the lower Marine formation this week. A good section of fine porous oil sand shown on a Schlumberger survey at 8,817-48 ft. indicates that Lisbon's deep possibilities may approach the success of deeper drilling at Cotton Valley, where the Bodcaw and D sands of the formation have shown large reserves of gas, condensate and oil.

A string of 5-in. casing was set at 8,900 ft., the bottom of the hole. The well, No. 1 Lloyd, is a cooperative venture, supported by operators in the Pettit-lime field, and by interested parties in North Louisiana generally. Other showings of gas were cored at 8,260-78 ft., in a porous sand, and at 8,347-75 ft., and 8,449-55 ft., all in the lower Marine formation.

Caddo Extension

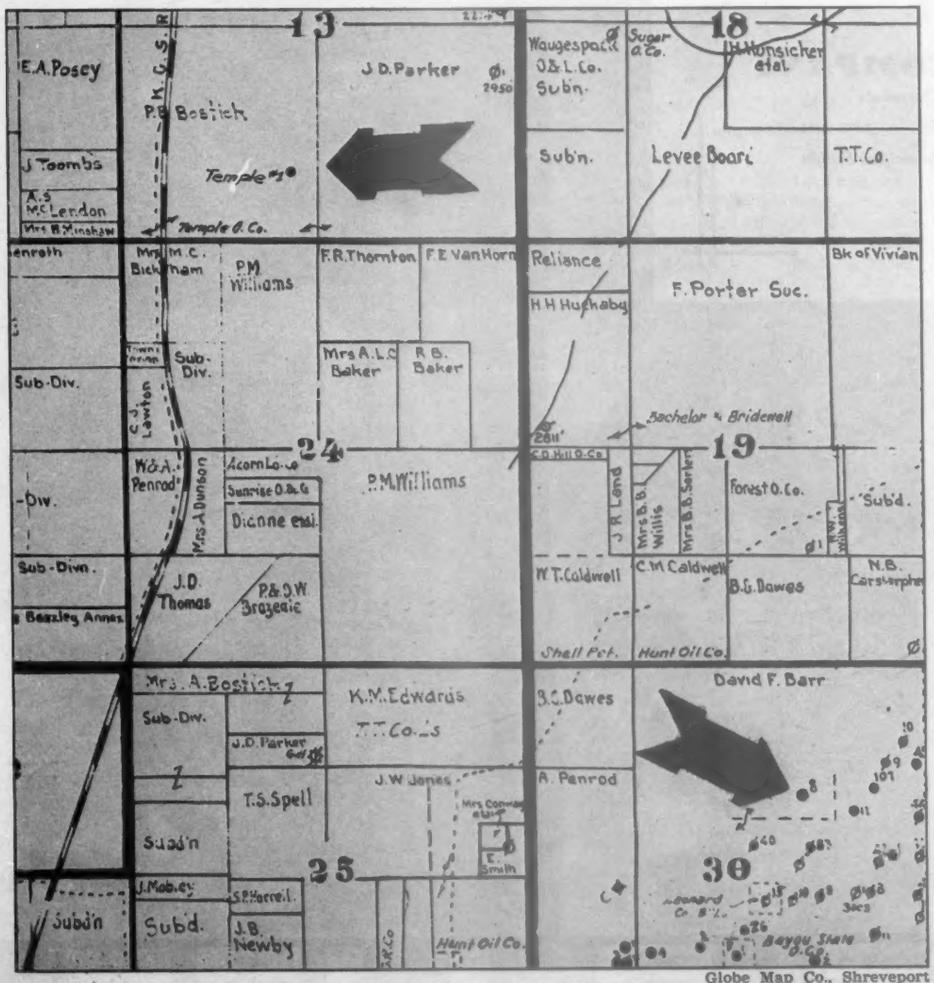
Another drilling campaign in Caddo Parish is indicated following the discovery of good Woodbine-sand oil production in a wildcat north of the town of Vivian. The well, Temple Oil Corp.'s No. 1 Bostick, is in the SE cor. SW¼ Section 3-22-16, about 2 miles northwest of nearest production in the old Caddo field, and 2½ miles northeast of the Vivian extension area which received a considerable drilling play several months ago.

The well cored a 10-ft. section of Woodbine sand saturated with oil at 2,548-58 ft., and a string of 5½-in. casing was set at 2,549 ft. The well was brought in and on open flow a 500-bbl. lease tank was filled with the 45.7-gravity oil in 8½ hours. A later gage on a 22/64-in. choke showed the well flowing at the rate of 25 bbl. per hour. The well is equipped with light surface connections, which may require that it be killed to install a tree. The shallow depth makes this new extension attractive for drilling development by independent operators who make up the greatest percentage of Caddo field producers. A drilling campaign similar to that which followed the discovery of oil at Vivian recently, may be expected.

Pine Island Test

Nearby, also in Caddo Parish, Stanolind Oil & Gas Co. has set 10,164 ft. of 7-in. casing on bottom to protect the hole, and plans are for drilling further. This deep test, which was highly regarded as a potential discovery of lower Marine production on the Pine Island structure, has been a disappointment, having found no showings of oil in the tight sands of that series. The large amount of money invested in leases in the area, however, indicate that another test will be drilled at Pine Island, possibly farther down the structure. The Stanolind test was located at the top of the feature.

South of Shreveport, David Crawford's No. 1 Lloyd, a wildcat in the Broadmoor section, is drilling below 5,050 ft. in lime after penetrating the Jeter zone with no showing. It will be carried to the Pettit lime. To the west, near the Texas State line, Arkansas Louisiana Gas Co.'s No. 1 Bell, an outpost to the deep gas-distillate Waskom field of Harrison County, Texas, is coring ahead below 6,170 ft. This well made 15,000,000 cu. ft. of gas on a drill-stem test of the Pettit lime at 5,627-77 ft., and is being carried deeper in search of further production possibilities.



Globe Map Co., Shreveport

A new productive area in Caddo Parish was opened by Temple Oil Corp.'s No. 1 Bostick, making 25 bbl. hourly at 2,548-58 ft. It is 2 miles northwest of production in the Caddo field, and 2½ miles northeast of the recent Vivian extension sector

Production by Pool

Estimated daily gross production all companies week ended November 3:

NORTH LOUISIANA

	Barrels
Bellevue	470
Caddo light	5,100
Caddo heavy	2,530
Converse	585
Cotton Valley light	*9,975
Cross Lake	4,275
De Soto and Red River	1,080
Elm Grove	310
Haynesville	2,770
Holly	80
Homer	2,745
Lisbon	5,590
Pleasant Hill	85
Rodessa	22,940
Sarepta-Carterville	†275
Sligo	970
Sugar Creek	240
Urania	2,520
Zwolle	2,450
Total	64,990

SOUTH ARKANSAS

Atlanta	450
Buckner	2,430
Champagnolle	1,380
Dorcheat	415
El Dorado	1,610
Lewisville	1,200
Lisbon	245
Magnolia	16,685
Miller County	300
Nevada	540
Rodessa	3,125
Schuler	18,200
Smackover light	1,860
Smackover heavy	14,470
Stephens	530
Troy	1,275
Urbana	970
Village	1,115
Total	66,800

MISSISSIPPI

Tinsley	785

Texas side of Rodessa field 27,490.

*3,090 bbl. is distillate.
†95 bbl. is distillate.

Arkansas

A Union County wildcat, Delta Drilling Co.'s No. 1 Grace caused considerable excitement early in the week with the coring of a porous section of the Smackover lime, showing oil. The Buckner formation was topped at 6,628 ft., Smackover lime at 6,701 ft. and the porous zone at 6,717 ft. A Schlumberger survey, later run, showed the porous zone beginning at 6,708 ft., with salt water at 6,712 ft. This explains the testing of 7 stands of mud, 36 stands of salt water and only a show of oil on a drill-stem test at 6,701-27 ft. The test is shut down awaiting orders. It is believed by some that it will make

(Continued on Page 76)

Texas and Louisiana Gulf

By NEIL WILLIAMS

New Deep Pool in Jefferson Parish; Extend Villa Platte

HOUSTON, Tex., Nov. 6.—The Barataria prospect in Jefferson Parish, coastal Louisiana, was added to the list of Gulf Coast fields as California Co.'s No. 1 Adams-Rutley was washed in at the close of the week, flowing approximately 7 bbl. of oil per hour through a ½-in. choke, under a tubing pressure of 1,475 lb. This well was drilled to a total depth of 12,222 ft., and was completed through perforated casing at 8,204-14 ft.

The well is in Section 2-16s-23e, paproximately 10 miles south of New Orleans and about 7 miles north of the Lafitte field. The company worked the area with geophysical instruments in 1938, and a block of about 12,000 acres is reported to have been leased. Interest is now centered on Continental Oil Co.'s No. 1 Bernstein, also in Section 2, and about 1 mile from the discovery. The well is on a structure mapped by Louisiana Land & Exploration Co., which is reported to have given Continental Oil Co. a half interest in approximately 3,500 acres for the drilling of a deep test.

Tertiary Wilcox production in the Villa Platte field, Evangeline Parish, was apparently extended ½ mile south as J. K. Hughes' No. 1 Ortego, Section 36-3s-2e, topped the Wilcox sand showing gas at 9,960-90 ft., and cored sand showing oil at 10,122-60 ft. The sand section is reported to have tested 8½ per cent saturation and 17 per cent porosity. The well is correlating about 60 ft. higher than Continental Oil Co.'s No. 2 Corell to the north. No. 1 Ortego was abandoned several months ago at 9,166 ft. after it failed to find production in the Sparta sand.

In the Pardis field, St. Charles Parish, Texas Co.'s No. 2 Paradis, Section 6-14s-20e, is preparing to test after 7-in. casing was cemented on bottom at 10,497 ft. This well failed to core the discovery sand, and casing was cemented to test a new sand cored at 10,080-10,100 ft. and 10,120-10,214 ft.

In La Place area, St. John the Baptist Parish, Pan American Production Co.'s No. 1 Mills, Section 12-11s-7e, is bottomed at 10,175 ft. and 7-in. casing was cemented at 10,120 ft. The well is scheduled to test a sand topped at 10,000 ft., and if unsuccessful the hole will be plugged back and a series of tests will be made of several gas and distillate sands logged between 8,200 and 9,000 ft.

In the Happytown area, St. Martin Parish, Shell Oil Co., Inc.'s No. 1 Iberville Land Co. attracted attention as a drill-stem test was scheduled to be made. The hole is bottomed at approximately 9,750 ft. The well is reported to have cored sand with an oil-and-gas odor, but details of the core record were not available.

In the West Lake Verret field, St. Mary Parish, Shell Oil Co., Inc.'s No. 1 Michel was abandoned at 11,678 ft., and the rig is being moved in for No. 4 Jeanerette, situated 1,700 ft. from the west line and 1,700 ft. from the north line of Section 14-14s-12e.

On the Texas Coast

Along the Texas Coast a new producing area, 2½ miles northwest of the South Cotton Lake field, Chambers County, was assured as J. R. Turnbull's No. 1 Kirby Petroleum Co. was completed for an initial production of 7 bbl. per hour, flowing through a ¼-in. choke under a tubing pressure of 150 lb. and shut-in casing pressure 700 lb. gravity of the oil tests 34°. Production is from the Marginulina-Frio sand at 6,420-31 ft. This area attracted attention several weeks ago by the completion of the same operator's No. 1 Shepherd, which flowed oil for a short time and then "went dead."

In the same county and in the east extension area of the South Cotton Lake field, Salt Dome Oil Corp.'s No. 2 Williams, flowed 75 bbl. of oil in 19 hours through a ⅛-in. choke. The well is producing from sand at 6,511-21 ft. Offsetting it to the west, Humble Oil & Refining Co.'s No. 1-D Lawrence is bottomed at 6,525 ft. with 5½-in. casing cemented at 6,522 ft.

The South China field, Jefferson County, received its second oil well as George Echols and others' No. 1 Broussard, a south offset to the discovery well, was completed for an initial production of 190 bbl. per day, flowing through a ½-in. choke. Tubing pressure was 1,160 lb. and casing pressure 1,450 lb. The well is producing from the Frio sand at 7,878-86 ft., the total depth.

The Martha field, Liberty County, was extended to the southwest as Stanolind Oil & Gas Co. recompleted No. 1 Charzan for an initial production of 311 bbl. per day, flowing through a 5/32-in. choke under a tubing pressure of 1,325 lb. The hole is bottomed at 8,164 ft., and production was obtained by perforating casing at 8,152-56 ft.

In the Lovells Lake field, Jefferson County, Humble Oil & Refining Co.'s No. 7 Broussard flowed 166 bbl. per day through a ½-in. choke from a total depth of 7,790 ft. A string of 5½-in. casing was cemented at 7,783 ft. The same company's No. 2-B Steinhagen cored oil sand at 7,777-85 ft., total depth, and 5½-in. casing was cemented at 7,776 ft. Stanolind Oil & Gas Co.'s No. 1-B Steinhagen is testing through perforated casing at 7,775-80 ft. Location was made by John Blaffer for No. 1 Williams in the William Carr Survey.

Locations for two more wildcats were announced. In Newton County W-M Oil Co. staked location for an 8,000-ft. hole on the W. A. Smith lease in the Texas Central R.R. Co. Survey No. 2. Four miles south of Needville, Fort Bend County, Harold Link and John Mayo are moving in material for No. 1 R. G. Ross in Section 63, H.&T.C. Survey.

In the Old Ocean field, Brazoria County, production from a new horizon was opened by Sun Oil Co.'s No. 2 Borsodi, northeast of production in the C. Breen Survey. The well was drilled to a total depth of 10,291 ft., and after several attempts to complete it in the 10,000-ft. sand failed the hole was plugged back and the well completed through perforated casing at 9,752-86 ft. for an initial production of 256 bbl. per day flowing through a ¼-in. choke. Offsetting it to the south, Stanolind Oil & Gas Co. staked location for No. 1 Giles.

In the League City field, Galveston County, Phillips Petroleum Co.'s No. 1 Wimhurst was plugged back to 10,630 ft., and the casing was scheduled to be perforated for a production test. This well was drilled to a total depth of 10,964 ft. where it attempted to blow out, causing the drill stem to stick. This is the deepest well drilled in the field and, if productive, will open a new sand for exploitation.

In the Anchor area, Brazoria County, Humble Oil & Refining Co.'s No. 1 Mettler, approximately 1½ miles northeast of the discovery well, is bottomed at 7,363 ft., and a protection string of 9⅝-in. casing was cemented at 7,139 ft. Glenn McCarthy's No. 1 Salmon and Mumma, west of the discovery well, is drilling ahead after 9⅝-in. casing was cemented at 6,860 ft.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Brazoria County

Hastings field: C. H. Alexander's No. 3 fee, sand 6,092-6,123 ft., 660 bbl., ¼-in. choke. Old Ocean field: Mid-Continent Oil Co.'s No. 2 Williams, 10,525 ft., 358 bbl., various chokes. Sun Oil Co.'s No. 2 Borsodi, perforated casing 9,752-86 ft., 256 bbl., ¼-in. choke. West Columbia field: Texas Co.'s No. 90 Hogg, sand 2,950-70 ft., 282 bbl., ¼-in. choke.

Chambers County

Anahuac field: Humble Oil & Refining Co.'s No. 31 Johnson, sand 7,112-24 ft., 591 bbl., ¼-in. choke. South Cotton Lake field: Humble Oil & Refining Co.'s No. 1-C Julia Casey, sand 6,486-92 ft., 152 bbl., ¼-in. choke. Salt Dome Oil Corp.'s No. 2 Williams, sand 6,511-21 ft., 75 bbl., 19 hours, ⅛-in. choke.

Hardin County

Silsbee field: Republic Production Co.'s No. 1 J. R. Ferguson, sand 6,893-6,908 ft., 305 bbl., ⅛-in. choke.

Harris County

Aldine field: E. C. Hankamer and others' No. 1 Hairgrove, 7,233 ft., dry and abandoned. Clear Lake field: Humble Oil & Refining Co.'s No. 23-C Humble-West, 5,908 ft., 144 bbl., ½-in. choke. Friendswood field: Humble Oil & Refining Co.'s No. 32 Beamer, 6,046 ft., 528 bbl., ¼-in. choke. Humble Oil & Refining Co.'s No. 16 West Production Co., 6,047 ft., 552 bbl., ¼-in. choke. Humble field: Humble Oil & Refining Co.'s No. 4 O'Connor, 4,355 ft., dry and abandoned. Tomball field: Humble Oil & Refining Co.'s No. 5 Doege, sand 5,591-95 ft., 173 bbl., ¼-in. choke.

Jackson County

Francitas field: Skelly Oil Co.'s No. 1 Kunover, perforated casing 7,949-51 ft., 140 bbl., 5/32-in. choke. West Ranch field: Lonnie Glasscock, perforated casing 5,586-94 ft., and 5,600-13 ft., 600 bbl., ¼-in. choke. Humble Oil & Refining Co.'s No. 3 Toney, sand 5,520-40, 407 bbl., ¼-in. choke. Magnolia Petroleum Co.'s No. 26 West ranch, sand 5,530-43 ft., 423 bbl., ¼-in. choke.

Jefferson County

Lovells Lake field: Humble Oil & Refining Co.'s No. 7 Broussard, sand 7,783-90 ft., 166 bbl., ½-in. choke. South China field: George Echols and others' No. 1 Broussard, sand 7,875-86 ft., 190 bbl., ½-in. choke.

Liberty County

Hull field: Marrs McLean's No. 2 Ward, 5,750 ft., 148 bbl., pumping. Martha field: Stanolind Oil & Gas Co.'s No. 1 Frank Charzan, perforated casing 8,152-56 ft., 311 bbl., 5/32-in. choke.

Polk County

Segno field: Gulf Oil Corp.'s No. 4 Wing, sand 5,231-41 ft., 517 bbl., ¼-in. choke. Humble Oil & Refining Co.'s No. 17-Bx Kirby Lumber Co., sand 8,105-65 ft., 292 bbl., ¼-in. choke.

Western Kentucky

(Continued from Page 52)

686 ft. Easton district, W. J. Flesher and others' No. 1 Jane Sanders, rigging up.

Henderson County, Spottsville district, Magnolia Petroleum Co.'s No. 1 Boyd heirs, drilling at 1,325 ft.

McLean County, South Livermore district, Cumberland Petroleum Co. and others' No. 8 D. and S. Butterfield, rigging up.

Ohio County, Sunnydale district, Tuttle and Rusling's No. 4 Lena Berry, 10-bbl. well in upper Pennsylvanian, total depth 161 ft.; No. 5 is drilling at 133 ft. Oklahoma district, O. D. Vickers and others' No. 4 T. Green, 10-bbl. well in Jett sand, total depth 580 ft. Friendship Church district, Glen Chancellor and others' No. 2 W. T. Griffith, location. Adaburg district, Henry Scholl and others' No. 8 T. L. Hickey, drilling at 480 ft. Ohio Oil Co.'s No. 16 W. B. Kelley, location. George Galy and C. F. Kimmell's No. 1 G. R. Wooten, dry and abandoned in Corniferous lime, total depth 2,222 ft.

THEY'VE *got what you*

"STABBING" PIPE ON THE "FIRING LINE"
This is part of the O. C. Whitaker Company's West Spread working near East St. Louis, Illinois. The "Caterpillar" track-type Tractor shown here—one of seventeen laying the Magnolia Line—is equipped with a Trackson side-boom.

"STABBING IN" A LONG SECTION OF PIPE
These "Caterpillar" track-type Tractors are using Cardwell booms on the West Spread of the Magnolia Line. Two of Whitaker's "Caterpillar" fleet are almost three years old . . . have laid almost 400 miles of pipe . . . needed less than $35 for repairs!

THE O. C. Whitaker Company is laying its section of the Magnolia Line from St. Louis, Missouri, to Lima, Ohio—*and laying it entirely with "Caterpillar" track-type Tractors!*

Whitaker's reasons for using this equipment 100% are made more than evident by the statements from the two men chiefly responsible for the job!

LOY WILSON, the O. C. Whitaker Company's General Superintendent, says: "We have found 'Caterpillar' equipment most suitable for various reasons. In the first place, the facility of servicing, due to the dealer organization, is superior to that of any equipment we have used. Secondly, operation has proven to be more efficient—due primarily to quick-acting steering, excellent visibility and efficient power for mounted equipment."

L. B. McINTOSH, the O. C. Whitaker Company's Head Mechanic, says: "My job is to keep our machinery on the job. With 'Caterpillar,' that is an easy task . . . we find that we can depend on 'Caterpillar' track-type Tractors to keep going 24 hours a day, rain or shine."

But Whitaker isn't the only concern which has such a high regard for the stamina and dependability of "Caterpillar" track-type Tractors. You'll see these machines at work in *every phase* of the oil industry—and you'll nearly always see them handling *every* tough job! They've got what you need for a line drive . . . *or any other drive:* sound design and sturdy construction to stay with the work till it's finished!

Pictured here are the Whitaker Company's East and West Spreads on the Magnolia Line—*running as much as 11,000 feet in an 8-hour day.* Only real ability to handle the job, plus ruggedness and stamina to keep you free from excessive maintenance-repairs, can give you progress like that!

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

CATERPILLAR

REG. U.S. PAT. OFF.

DIESEL ENGINES • TRACK-TYPE TRACTORS

...u need FOR A LINE DRIVE!

MAKING A BEND

The 10-inch Magnolia Pipe gives up to two boom-equipped "Caterpillar" track-type Tractors as they turn on the power to make a bend. This is also part of the West Spread at work.

CRADLING

(upper, right-hand photo)

The O. C. Whitaker Company's East Spread—working below Vandalia, Ill. A boom-equipped "Caterpillar" track-type Tractor cradles the pipe for the cleaning and priming machine.

DOPING AND WRAPPING

A Trackson boom on a "Caterpillar" track-type Tractor cradles the Magnolia Pipe Line for the W. K. M. doping and wrapping machine. More East Spread activity.

LOADING PIPE

One of the O. C. Whitaker Company's "Caterpillar" track-type Tractors, equipped with a LaPlant-Choate bulldozer, loads pipe for the East Spread to prevent noticeable distortion from expansion and contraction.

...L LAR

...OAD MACHINERY

Rocky Mountain Area

By
T. R. INGRAM

Start Test Between Halfway and Maljamar, N. M., Sectors

DENVER, Colo., Nov. 6.—The northern Rocky Mountain area had only two completions the past week, one a small shale well in the Osage field in Wyoming, and the other the Continental Oil Co.'s No. 98 Rattlesnake, in northwestern New Mexico. Last named, half a mile out from the nearest producer, pumped 271 bbl. per day at 828 ft.

The Continental Oil Co.'s wildcat on North Geary dome, Wyoming, had saturation in the Muddy sand and is endeavoring to obtain a drill-stem test.

New operations included two in Lance Creek; a wildcat southeast of the Osage field, two in the Kevin-Sunburst field, two in Cut Bank, and one in the Rattlesnake field.

Leading the development in the Southeast New Mexico district for another week was the continued activity in the vicinity of the Westlea Oil Co.'s new pool opener in the extreme western part of Lea County.

Topping the development was the staking of a new wildcat 7½ miles north of Westlea's new Halfway pool. It is Culbertson & Irwin, Inc., and Plains Production Co.'s No. 1 J. S. Lea, C NE NE Section 8-19s-32e, between the Maljamar and Halfway pools. With machinery on the grounds, the test will be spudded immediately and carried to a contract depth of 3,000 ft.

Meanwhile the Westlea Oil Co.'s No. 1-A Texas Co.-State, discovery well of the Halfway pool, in Section 16-20s-32e, was rigging up pump preparatory to official gaging. Saturation was drilled from 2,627 to 2,629 ft. and has reported a top gage of 1,050 bbl. of 28.6-gravity oil in 17½ hours swabbing through casing. Three new tests were started immediately following the discovery and another was started during the week past. It is the Federal Unit's (Continental Oil Co., Standard Oil Co. of Texas, Atlantic Refining Co. and Stanolind Oil & Gas Co.) No. 1 Robert C. Langston, C SW SW Section 15-20-32, ¾ mile southeast of the discovery well.

Activity in the Loco Hills pool of northeastern Eddy County showed an increase during the week as four new tests were started and six oil wells completed. Largest of the completions was the Brainard & Guy's No. 1 Brainard, Section 10-18-29, which flowed 40 bbl. of oil per hour through open 2-in. tubing set at 2,130 ft. after shooting the pay section with 100 qt. from 2,591 to 2,608 ft.

Another prospective pool opener for Eddy County, B. H. Nolen's No. 1-X Iles, northwest of the Grayburg-Jackson area and in the SE SE SE Section 17-16-29, was still testing at a total depth of 1,824 ft. Pay sand was drilled from 1,800 to 1,820 ft. several weeks ago and it has reported a preliminary gage of 8 bbl. hourly, swabbing.

SOUTHEAST NEW MEXICO COMPLETIONS

Lea County

Barnsdall Oil Co.'s No. 2 Caylor, Section 6-17-37, flowed 200 bbl. in 10 hours through ½-in. choke after acidizing from 4,825 to 4,975 ft. Cities Service Oil Co.'s No. 3-K State, Section 27-17-35, flowed 16 bbl. in 6 hours through ¼-in. choke. It had been acidized from 4,410 to 4,640 ft. Drilling & Exploration Co.'s No. 2-E State, Section 24-17-34, flowed 216 bbl. daily through 20/64-in. choke, from pay at 4,535 to 4,685 ft. Humble Oil & Refining Co.'s No. 5-H State, Section 34-22-37, flowed 196 bbl. in 4 hours through 1-in. choke after a shot at 3,560 to 3,665 ft. Magnolia Petroleum Co.'s No. 8 Carson, Section 33-21-37, flowed 427 bbl. daily through 31/64-in. choke from pay at 3,620 to 3,775 ft.

Eddy County

Aston & Fair's No. 2 Hudson, Section 18-17-31, flowed 100 bbl. daily through open tubing after a shot at 3,390 to 3,501 ft. Brainard & Guy's No. 1 Brainard, Section 10-18-29, flowed 40 bbl. hourly through open tubing after shot at 2,597 to 2,608 ft. Carper's No. 1 State, Section 16-18-29, flowed 500 bbl. in 18 hours through open casing after a shot at 2,488 to 2,527 ft. Continental Oil Co.'s No. 1-M-2 State, Section 2-18-29, flowed 105 bbl. in 4 hours through ¾-in. choke. It had been shot at 2,640 to 2,672 ft. F.W.&Y. Oil Co.'s No. 1 State, Section 1-18-19, flowed 120 bbl. in 4 hours through open tubing after shot at 2,682 to 2,745 ft. C. J. Kleiner's No. 1 Watson & Smith, Section 4-18-29, flowed 25 bbl. daily. It had been shot at 2,478 to 2,638 ft. Me-Tex Supply Co.'s No. 1 State "16," in Section 16-18-31, junked and abandoned at 3,535 ft. Me-Tex Supply Co.'s No. 1-B Ballard, flowed 35 bbl. daily through open tubing after shot at 2,552 to 3,017 ft., located in Section 8-18-29.

San Juan County

The Continental Oil Co.'s No. 98 Rattlesnake, an outside well in the southeastern part of the Rattlesnake pool, ½ mile east of the nearest producer, pumped 102 bbl. initially from Dakota sand at 825-28 ft., and later increased to 271 bbl. per day. It is 2 miles from the most northerly producer.

MONTANA

Carbon County

The Ohio Oil Co. is going back into its No. 9 Souders, on the north flank of the Dry Creek field, and drill it deeper. It is ¼ mile southeast of Valentine M. Kirk's No. 1 Robinson, which recently was abandoned, and is an outside well. It was completed in 1933 at 5,509 ft. and was estimated at 1,000 bbl. per day, but was allowed to flow 300 bbl. per day under back pressure. It was plugged back to 5,498 ft.

Glacier County

Cut Bank had two new operations, and no completions.

Texas Co.'s No. 3 Tweedy, CWL NW NE Sec. 21-35n-6w. M.I.M.; (first report).
Texas Co.'s No. 2 Lindquist, C SW SE Sec. 17-32n-5w. Loc.; (first report).

Teton County

R. C. Tarrant's No. 1 Hoeschen, NE SE Section 34-27n-5w, West Pondera district, reported a completion recently at 2,298 ft. for 10 bbl. per day, a discovery, gas plugged back to a sand in the basal Colorado at 1,560-1,640 ft. and recompleted as a gas well. It gaged 2,700,000 cu. ft. initially while drilling was in progress.

Toole County

Kevin-Sunburst had two new operations and no completions.

Nepstad-Montgomery-Fargher's No. 2 Haugen, SE SE SW Sec. 2-35n-3w. Drlg. 670 ft.; (first report).
A. E. Crumley & Son's No. 17 Fryberger, NE SE SW Sec. 24-35n-3w. Drlg. 640 ft.; (first report).

WYOMING

Natrona County

The Continental Oil Co.'s No. 1 McGrath, exploratory well on the North Geary structure, is bottomed at 6,406 ft. and trying to run a drill-stem test. It is reported to have cored saturated Muddy sand at 6,373-83 ft., but to have recovered only the last 3 ft., the upper part being soft., with the 3 ft. recovered bleeding oil. While running tester it is reported that it showed indications of flowing and it was decided to increase the weight of the mud as a precautionary measure. After test is made it is planned to continue drilling to lower horizons. The well is located 7½ miles northeast of Casper, same distance southwest of the Cole Creek field, and same distance southeast of the Midway dome. The block contains 15,000 acres, and was originally leased in 1915-16 by H. Leslie Parker, of Denver, and N. M. Wheeler and L. S. Worthington, of Casper.

Niobrara County

Lance Creek had on near completion and two new operations, with several wells due for completion next week. The Ohio Oil Co.'s No. 13 Elizabeth Lamb is testing at 5,467 ft., total depth, and through the drill stem made 30 bbl. in 30 minutes. It had the top of the Leo zone at 5,270 ft. and saturated lime at 5,388-97 ft., and was acidized with a total of 2,000 gal.

The Utah Refining Co.'s pipe line from Lance Creek to Salt Lake City is nearing completion, and it began running oil this week to fill the line and test. It will require about 150,000 bbl. to fill the line, and in anticipation of this the company has been storing oil for several months.

Weston County

The Federal Oil Co.'s No. 10-X, CNL NE SE Section 15-46n-64w, Osage field, reported a completion last week for 20 bbl. naturally in sand at 2,140-70 ft., was shot and increased to 40 bbl.

Butcher Brothers' No. 4, CWL SW NE Section 16-43n-63w, was completed in sand at 221-48 ft. for 3 bbl. per day naturally on the pump.

John Brorphy is moving in materials for his No. 1 L. B. Hansen, a test midway between the Osage field and the town of Newcastle. It will go to the Muddy sand at approximately 2,200 ft. He will test out the possibility that the sand will show more thickness than the average Muddy sand and that it will be a shoreline well rather than an estuary deposit like that at Osage.

SOUTH DAKOTA

Harding County

South Dakota State Roy. Co.'s No. 1 State, SW NW Sec. 35-18n-1e. Drlg. 7,200 ft.

California Fields

(Continued from Page 64)

to exploit the virgin zone beneath La Merced zone, as the latter is still in a flush stage and capable of yielding the maximum allowable under the existing court injunction which limits the production of gas and indirectly regulates crude-oil production.

Early this week, Montebello Oil Co. recompleted No. 1 Reservoir flowing 570 bbl. of clean 48.2-gravity oil and 1,100,000 cu. ft. of gas per day from La Merced zone at 7,637 ft. This well originally completed in the Masser zone at 6,715 ft. was deepened to La Merced zone and brought in flowing through a 52/64-in. bean showing a tubing pressure of 1,320 lb. and a casing pressure of 1,500 lb.

Strand

In the Strand field of Kern County which was discovered a few months ago by Tide Water Associated Oil Co. in conjunction with Continental Oil Co., Shell Oil Co., Inc., completed No. 75-12-B Kern County Land flowing 3,342 bbl. of 34.2-gravity oil and 3,100,000 cu. ft. of gas per day from the Stevens zone with bottom of the hole at 8,320 ft. It is the most westerly flowing well in the field and extends the productive limits at least one location west.

Mount Poso

In the Mount Poso field of Kern County Ring Oil Co.'s No. 29-10 Bowles in Section 29-26-28, was brought in pumping 350 bbl. of clean 15.1-gravity oil per day from the productive Vedder zone at 1,802 ft. It topped the Vedder zone at 1,873 ft. and was finished with an 8⅝-in. water string cemented at 1,782 ft. and 42 ft. of 7-in. liner including perforations at 1,782-1,802 ft. Offsetting this completion, Ring Oil Co. abandoned No. 4

Blackfoot in Section 32-26-28, as a duster as the Vedder zone which was topped at 1,871 ft. consisted of a barren gray sand.

Long Beach

Atlantic Oil Co. completed No. 12 Signal in the Long Beach field pumping 168 bbl. of 23.3-gravity oil cutting 8 per cent daily from the Wilbur zone at 3,230 ft. The hole was finished with a 7-in. water string cemented at 3,120 ft. and 130 ft. of 5-in. liner carrying perforations at 3,120-3,230 ft.

Los Angeles Basin

Tide Water Associated Oil Co. in the Aliso Canyon field of Los Angeles Basin, completed No. 11 Fernando, flowing 880 bbl. of 19.8-gravity oil and 500,000 cu. ft. of gas per day from 5,073 ft. No. 11 Fernando, the most easterly producing well in the Aliso Canyon field and an offset to No. 11 Porter was finished with an 8⅝-in. water string cemented at 4,799 ft.

Continental Oil Co. is turning again to the Seal Beach field and will soon start drilling on the Bixby lease in Section 11-5-12, in search of the zone that a few weeks ago gave the Heilman estate an excellent flowing well.

Coastal District

Union Oil Co., discoverer of the Santa Maria Valley field, completed No. 2-3 O'Donnell flowing 3,290 bbl. of 14.9-gravity oil and a small amount of gas per day from a depth of 5,350 ft.

San Joaquin Basin

In the North Belridge field of Kern County, Tide Water Associated Oil Co. completed No. 24 in Section 21-27-28, flowing through open line at the rate of 1,910 bbl. of 31.6-gravity oil and 1,340,000 cu. ft. of gas per day from the Wagonwheel zone. This well which shows a tubing pressure of 250 lb. and a casing pressure of 1,080 lb. was bottomed at 8,566 ft. and finished with a 7-in. water string cemented at 8,429 ft. and 188 ft. of 5-in. liner landed at 8,566 ft. and perforated at 8,414-8,566 ft. A total of 8,256 ft. of 2½-in. tubing completed the program.

Kansas Fields

(Continued from Page 54)

3,517 ft., total depth 3,526 ft., it was given two-stage acid treatment but the hole filled with water and it was abandoned.

Allred & Glass' No. 1-A Miller, C SW SW Section 14-32-5, was a machine. Ben Gralapp's No. 1 Bailey, C NW NW Section 26-32-5, was moving in material.

Pratt County

Skelly Oil Co.'s No. 2 Krehbiel, S½ S½ SE Section 24-27-11w, Cunningham field, Pratt County, was completed in Viola lime at 4,003-19 ft., total depth. Initial gage was 12,872,000 cu. ft. of gas daily. It was acidized and production increased to 55,150,000 cu. ft. of gas daily, with casing pressure of 1,350 lb.

New Operations

In Rooks County Krueger and others' No. 2 Krueger, C N½ NE SW Section 11-9-16w, was drilling below 1,375 ft.

In Greenwood County Reed and others' No. 2 Shell heirs, SE NW NE Section 17-28-11, was rigging up machine; Aikman & Braden's No. 4-B Meyers, NE SW SE Section 10-24-12, was drilling below 375 ft.; Oko Oil & Gas Co.'s No. 19 Shadel, C N½ S½ SE Section 15-23-13, was drilling below 350 ft.

In Coffey County D. E. Dunne's No. 7 Rossillion, NE SE SE Section 1-23-14, was rigging up machine.

In Ellsworth County, Duwe & Farris' No. 1 Boye, C W½ SW SW Section 9-16-10w, was waiting on cement at 357 ft.; Skelly Oil Co.'s No. 4 Moran, C S½ SW SE Section 31-17-10w, was building rotary rig.

Forest City Basin Activity

ST. JOSEPH, Mo., Nov. 6.—Encouraged by the oil strike at nearby Falls City, Nebr., operators in the Missouri and Kansas sectors of the Forest City basin continued their wildcat drilling campaign, three new Missouri tests being started.

E. F. Neely's No. 1 Shores, SE SE SE Section 12-60-37w, 1 mile west of Fillmore, Andrew County, Missouri, was spudded with rotary October 26 and at the week end was drilling below 1,815 ft. in Mississippi lime. M. F. Bear, chief geologist for Derby Oil Co., is stationed at the well. The Derby company owns a 3,000-acre block around the test. It is expected the well will be completed in 30 days, which will be a record for the basin. Contract depth is 3,000 ft.

Ward McGinnis' No. 1 Laughlin, SE SE SW Section 18-6s-15w, Adair County, was drilling below 400 ft. The third new test was McArthur & LaMar's wildcat in Carroll County, in NW¼ Section 22-55-25w, which was spudded and shut down at 20 ft. Drilling was expected to be started soon at tests in Buchanan and Platte counties.

Davis Brothers' No. 1 Gee, NW NW SE Section 28-60-35w, Andrew County, was dry and abandoned at 2,750 ft., total depth, in Arbuckle lime. Some oil showings were found, principally in Ste. Genevieve lime, found at 1,473-1,523 ft.

A disappointing showing followed acid treatment at Morrow & Rodgers and others' No. 1 Cooley, SE SE NW Section 33-64-17w, Adair County wildcat that gave promise of finding oil. Hunton lime at 871-86 ft. was acidized with 1,000 gal. but yielded only a small amount of oil. Operators may deepen to Arbuckle lime, although it previously was plugged back from 965 ft.

Oklahoma Fields

(Continued from Page 55)

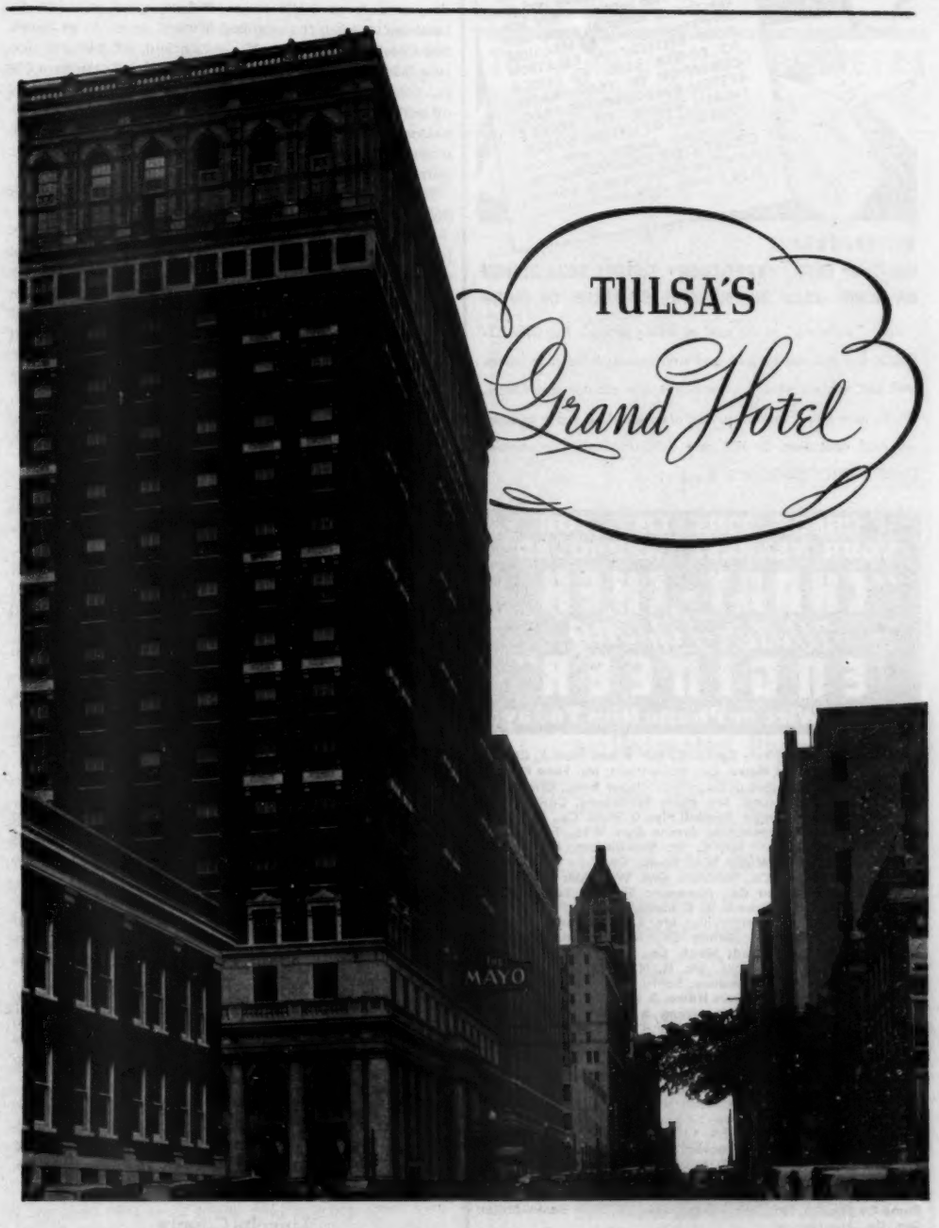
4-6-5, St. Louis district, Pottawatomie County, found dolomite at 4,120 ft., was bottomed at 4,165 ft., and 7-in. pipe was set at 4,133 ft. After acidizing with 5,000 gal., it pumped 140 bbl. of oil and 900 bbl. of water daily.

Mudge Oil Co.'s No. 3 Baptiste, SE NE NE Section 20-7-4, flowed 165 bbl. of oil in 24 hours after a shot. Top of Earlsboro sand was 3,538 ft., total depth 3,569 ft.

Alma Oil Co.'s No. 4 Youts, NE SW SW Section 28-7-5, topped dolomite at 4,082 ft., set 7-in. at 4,074 ft., total depth 4,112 ft. It was acidized and pumped 250 bbl. of oil and 100 bbl. of water daily.

Trigg's No. 1 Boyd, SW NE SW Section 28-7-5, pumped 30 bbl. of oil and 800 bbl. of water after acid treatment. It had dolomite at 4,159 ft., set 5-in. pipe at 4,150 ft., and was bottomed at 4,184 ft.

Gulf Oil Corp.'s No. 4 Johnson, NE SE NW Section 29-7-5, found Viola lime at 3,978 ft., dolomite 4,058 ft., total depth 4,150 ft., was acidized and pumped 152 bbl.



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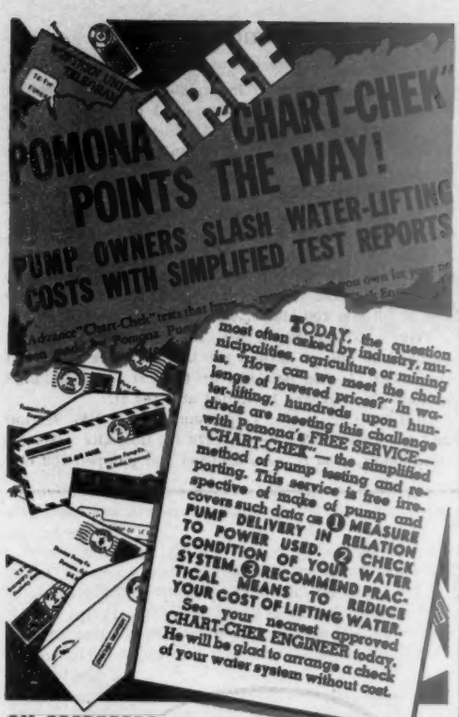
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POMONA

Water-Lubricated

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of oil and 20 bbl. of water daily. Eight-inch casing was set at 3,996 ft.

Trigg's No. 1-A Higdon, C E½ NW NE Section 5-6-5, had sand at 3,134 ft. and was dry and abandoned at 3,200 ft., total depth.

In the Burton area, Farmers Mutual Co.'s No. 2 Waite, SE NE NW Section 9-5-5, topped Hunton lime at 2,370 ft., had Sylvan shale at 2,590 ft., Viola lime 2,726 ft., dolomite 2,828 ft., Wilcox sand 3,052 ft. and was bottomed at 3,143 ft. Water intruded and it was plugged back and casing ripped at 2,585-95 ft. and 2,420-45 ft. It then pumped 80 bbl. of oil daily.

Old Pottawatomie County wells reworked and recompleted include: Indian Territory Illuminating Oil Co.'s No. 7 Davidson, SW SE NW Section 23-6-3e, West Asher area, plugged back from 3,493 ft. and perforated at 2,510-16 ft., produced 9,500,000 cu. ft. of gas, with 965 lb. rock pressure. Phillaine Oil Co.'s No. 2 Garrett, NE SE NW Section 28-7-4, deepened from 4,226 ft. to Wilcox sand 4,261 ft., total depth 4,276 ft., swabbed 1,391 bbl. of 42-gravity oil in 24 hours. Sinclair Prairie Oil Co.'s No. 4 Deatheridge, SW NE NW Section 28-7-4, deepened from 4,162 ft. to Wilcox sand at 4,274 ft., total depth 4,310 ft., swabbed 952 bbl. of oil in 24 hours. Big Chief Drilling Co.'s No. 4 Canfield, SE SW SW Section 33-7-5, deepened from 4,175 ft. to dolomite 4,150 ft., total depth 4,252 ft., acidized, pumped 150 bbl. of oil and 1,500 bbl. of water daily. Indian Territory Illuminating Oil Co.'s No. 4 Shobe, SW SW SE Section 35-8-4, plugged back to 3,774 ft. and perforated at 3,445-87 ft., pumped 32 bbl. of oil daily.

Ray Stephens, Inc.'s No. 1 Stalnaker, SW SW NE Section 24-8-4, was an abandoned location.

New work in Pottawatomie County: Phillips Petroleum Co.'s No. 3 Betteis, SW SE SW Section 21-7-4, old well, rigging up standard tools to deepen from 4,176 ft.; Phillaine Oil Co.'s No. 4 Garrett, NE SW NW Section 28-7-4, location; Sinclair Prairie Oil Co.'s No. 7 Deatheridge, SE NW NW Section 28-7-4, location; Tilico Oil Co.'s No. 2 Brister, NW NW NE Section 28-7-4, old well, deepened from 4,164 ft. to Wilcox sand at 4,292-4,302 ft., running 5-in. pipe; Kerlyn Oil Co.'s No. 1 Askew, NW NE NE Section 17-7-5, digging cellar and pits; Dunnett's No. 3 McDonald, NE SW SE Section 31-11-4, rig.

Seminole County

Kerlyn Oil Co.'s No. 1 Rainey, SW NE SE Section 35-10-5, Earlsboro area, Seminole County, found Wilcox sand at 4,210 ft., had second Wilcox sand at 4,281-90 ft., total depth, plugged back to 4,057 ft., and ripped casing at 4,027-42 ft. It was acidized and flowed 160 bbl. of oil the first 24 hours, later pumping 55 bbl. of oil and 120 bbl. of water daily. Gravity of the oil was 39.5°.

Shepherd's No. 1-A Scroggins, NW NW SW Section 34-7-6, Little River district, was bottomed at 2,807 ft., shot at 2,765-2,805 ft. in sand, flowed 296 bbl. of oil the first 24 hours and 164 bbl. the next 24 hours.

Stanolind Oil & Gas Co.'s No. 1 Reed, SW SW NE Section 6-6-8, was digging cellar and pits.

Pontotoc County

R. H. Pierce's No. 1 Pettyjohn, SE SW SW Section 1-1n-7, Jesse area, Pontotoc County, was bottomed at 1,496 ft., shot in sand at 1,470-84 ft., and flowed 40 bbl. of 32-gravity oil in 24 hours.

E. H. Moore, Inc.'s No. 2 Statler, SW SW SW Section 34-2n-7, Fitts field, topped sand at 1,802 ft., set 5-in. casing at 1,801 ft., total depth 1,811 ft., and produced 9,000,000 cu. ft. of gas daily, with 400 lb. rock pressure.

Simpson-Roodhouse Drilling Co.'s No. 1 Hale, SW NW SE Section 34-2n-7, topped sand at 1,951 ft., and was abandoned at 1,965 ft., total depth, when water intruded. Simpson's No. 1 Westheimer, SE SW NW Section 26-2n-7, was an abandoned location.

New operations in Pontotoc County: Skelly Oil Co.'s No. 1 Garrett, NW NW NE Section 3-1n-7, location; Ada Co.'s No. 1 Haney, NW NW NE Section 6-4-7, rigging up machine; C. & R. Drilling Co.'s No. 1 Chism, NW NW SE Section 34-5-7, location.

Lincoln County

Wilcox Oil & Gas Co.'s No. 6 School Land, NW NW SE Section 16-14-6, Sac and Fox pool, Lincoln County, topped Prue sand at 3,032 ft., total depth 3,128 ft., was shot at 3,043-3,128 ft., and flowed 98 bbl. of oil in 16 hours. Six-inch pipe was set at 3,031 ft.

Same company's No. 7 School Land, NW SW SE Section 16-14-6, was a location, and the company's No. 1 Evans, NE NE NW Section 21-14-18, was a rig.

In McIntosh County W. B. Pine was moving in machine at No. 1 fee, NE SW NE Section 14-11-16.

In Okfuskee County the following new work was reported: Parker's No. 1-A King, NE NE SW Section 2-11-8, building rig; same operator's No. 1-A Wiltz, SW SW NE Section 2-11-8, location; Smith's No. 1-A Lanin, SE SE SE Section 25-11-11, twin well, location.

Creek County

Tilley's No. 1-A Bruner, NW SE SE Section 17-17-8, drilled Prue sand at 2,285-2,373 ft., total depth, was shot and pumped 15 bbl. of oil daily.

Curtis' No. 2 Franklin, SE SW SE Section 20-18-9, was completed for 6 bbl. of oil daily from Dutcher sand at 2,910-27 ft., total depth 2,948 ft.

Swift's No. 3 Jacoby, NE SE SW Section 7-18-10, Sapulpa district, found Prue sand at 1,961-2,019 ft., plugged back to 2,012 ft., was shot and completed for 25 bbl. of oil daily.

Stekoll's No. 1 Davidson, SE NE NW Section 6-19-8, an old well, was deepened from 2,832 ft. to Wilcox sand at 3,293-3,320 ft., total depth, the hole filled with water and it was abandoned.

Tide Water Associated Oil Co.'s No. 6 Richards, SE NE SW Section 4-17-7, was rigging up machine to deepen.

Okmulgee County

Recent completions in Okmulgee County include: C. H. Deaner's No. 1 Warner, C N½ SE SE Section 3-14-12, dry and abandoned at 2,096 ft.; J. Aggas' No. 4-A Berryhill, NE SW SW Section 16-15-14, total depth 865 ft., produced 1 bbl. of oil daily; Royal Co.'s No. 12 Johnson, NW SE NE NE Section 29-15-14, produced 1 bbl. of oil daily at total depth of 1,697 ft.

In Tulsa County J. A. Barth's No. 1 Fink, SE SE SW Section 13-19-14, was dry and abandoned at 1,183 ft., total depth.

Payne-Logan Counties

Mid-Continent Petroleum Corp.'s No. 12 Ramsey, SE NE NW Section 18-18-2e, Ramsey pool, Payne County, found white, salty sand in Wilcox zone at 4,944-74 ft., total depth, and was dry and abandoned. This test on the northeast side of the pool is the first failure to be recorded on the Ramsey community block. It is offset on the east by a failure outside the block.

In the Langston area, Logan County, Amerada Petroleum Corp.'s No. 2 Knight, NE SE SW Section 12-17-1w, an old well, was deepened from 5,100 ft. to second Wilcox sand at 5,158-67 ft., plugged back to 5,157 ft., and was recompleted, pumping 10 bbl. daily from original pay at 5,035-5,100 ft.

Two new tests were reported in the Coyle pool, Payne County, at Texas Co.'s No. 1 Carx, C W½ SW NE Section 12-17-1e, drilling below 480 ft., and same company's No. 4 Longan, C E½ NE NW Section 12-17-1e, drilling below 145 ft.

Pawnee County

Johnson Oil Refining Co.'s No. 12 Findley, SE NE NW Section 27-20-9, Keystone area, Pawnee County, found Red Fork sand at 2,020-42 ft., and was bottomed at 2,053 ft. It was shot and flowed 50 bbl. of oil daily.

Brewer's No. 2 Speers, CNL SE NW Section 27-20-9, was completed for 65 bbl. of oil daily after a shot. It had Red Fork sand at 2,029-50 ft., total depth 2,052 ft.

Haynes' No. 1 Tate, SE SE NW Section 9-20-9, was dry and abandoned in Bartlesville sand at 2,369-2,400 ft., total depth.

Same operator's No. 1-A Tate, SE SE NW Section 9-20-9, twin well, was a location.

Osage County

Recent completions in Osage County included Johnson Oil Refining Co.'s No. 11 Osage, NE NE NW SW Section 18-21-9, dry and abandoned at 950 ft.; Burke-Greis Oil Co.'s No. 1 Osage, NE NE NE Section 9-28-11, dry and abandoned at 976 ft., and Foundation Oil Co.'s No. 1 Pierce, NW NW NE Section 10-28-11, dry and abandoned at 991 ft.

Caddo County

Aladdin Oil Co.'s No. 1 Trotter, SE NE SW Section 3-5-9w, Cement field, Caddo County, was completed for daily potential of 3,307 bbl. of oil. It drilled Noble-Olson sand at 3,278-95 ft.; set 7-in. pipe at 3,393 ft., had sand at 3,393-3,418 ft., was bottomed at 3,422 ft., and flowed 551 bbl. of oil in 4 hours through casing.

Johnson's No. 1 Ackman, NW NE SW Section 3-5-9w, had dug cellar and pits. Twenty-five locations and active tests were included in the Cement drilling list the past week.

Stephens County

Armour's No. 3 Nigh, SE NE SW Section 11-2s-8w, Comanche area, drilled to 2,280 ft., plugged back to 2,015 ft., and was dry and abandoned.

Carl Carter's No. 3-B Spears, SE SE NW Section 15-1s-5w, an old well in the Velma area, Stephens County, was dry and abandoned after deepening from 722 ft. to 1,200 ft.

George Pace's No. 2-A Woodward, NW NW NE Section 14-2s-8w, was dry and abandoned at total depth of 2,205 ft.

Bristow's No. 1-B Damron, NW NW SW Section 25-2s-6w, had spudded George Pace's No. 2-C Montgomery, SW NW SE Section 11-2s-8w, was rigging up rotary tools. Tomlinson's No. 6 Fobb A, NE NE SE Section 12-2s-8w, was moving in rotary tools. Phillips Petroleum Co.'s No. 1 Donahue, SE SE NW Section 4-1n-5w, had dug pits.

Cotton County

Shasta Oil Co.'s No. 1 Ta-hi, NW NW SE Section 31-1s-9w, Walters area, Cotton County, was dry and abandoned at 2,305 ft., total depth.

In Jackson County Vaughn's No. 7 Stokes, C N½ SE SW Section 11-1n-20w, was bottomed at 1,580 ft., set 7-in. casing at 1,334 ft., and was temporarily abandoned.

In Tillman County Indian Territory Illuminating Oil Co.'s No. 1 Fillmore, SW SW SE Section 36-2s-19w, an old well, was rigging up rotary tools to deepen from 5,141 ft.

In Carter County Magnolia Petroleum Co.'s No. 2 Gillespie, NE SW NW Section 33-1s-3w, was clearing site.

Eastern Kentucky

(Continued from Page 52)

United Carbon Co.'s No. 790, Republic Steel Corp. land, on Greasy Creek in Floyd County, was completed at a total depth of 4,082 ft. with 235,000 cu. ft. of gas production from shale and 450,000 cu. ft. of gas from Big lime. The same company completed No. 797, South Shelby Land Co., Tract 3, on Upper Chloe in Pike County, at a total depth of 3,450 ft. with an initial production of 28,000 cu. ft. of gas from Big lime and 30,000 cu. ft. of gas from shale.

United Carbon's No. 798 Republic Steel Corp. Tract 3 on Shop Branch in Pike County, completed at 4,153 ft., produced 45,000 cu. ft. of gas from shale and 15,000 cu. ft. of gas from Big lime.

Bent Mountain Oil & Gas Co.'s No. 1 Varney & Deskins heirs No. 1, on Bevins Branch in Pike County, started with 100,000 cu. ft. of gas daily at a total depth of 3,543 ft., in shale.

Charles Coleman abandoned a dry hole, No. 1 William Carnes, on Stinking Creek in Knox County, after reaching 800 ft.

Hamilton Gas Co. reports 103,000 cu. ft. initial production of gas in No. D-82, James Hatcher land, on Ivy Creek in Floyd County, completed at a total depth of 2,915 ft., in shale. The same firm has completed No. D-81 on the same land at 2,970 ft. with a daily gas flow of 206,000 cu. ft., and No. D-84, also on the Hatcher land, with 300,000 cu. ft. of gas production daily at a total depth of 2,714 ft. in shale. This well was on Dillion Branch.

Ware and others have a 350,000-cu. ft. gas production in No. 1 Cassidy heirs land, on Davis Branch in Martin County, with the well at a total depth of 2,586 ft., in shale.

Midway City Gas Co.'s No. 1, Hiram Howard land, on Troublesome Creek in Knott County, total depth 3,023 ft., produced 13,000 cu. ft. of gas from Big Injun sand and 103,000 cu. ft. of gas from shale.

Huntington Oil Co. and Diederich completed No. 1 Henry Davis, M. T. Davis farm, Wolf Creek, Martin County, at a total depth of 2,521 ft., with a flow of 2,792,000 cu. ft. of gas from shale and 281,000 cu. ft. of gas from Big lime.

The Rockcastle Gas Co.'s No. 1 Vinson heirs, at Buffalo Horn in Martin County, was completed with a production of 150,000 cu. ft. of gas daily from shale.

Southeast Gas Co.'s No. 788 Bryce Fugate, on Troublesome Creek in Knott County, total depth 2,782 ft., in shale, had a daily production of 200,000 cu. ft. of gas.

Penn Fitzpatrick and others have reported the completion of No. 1 Stephen Fitzpatrick, on Middle Creek in Floyd County, at a total depth of 1,870 ft. in shale. The well is making 250,000 cu. ft. of gas daily.

OHIO FIELDS

NEWARK, Ohio, Nov. 6.—Five oil wells, five gas wells, and three dry holes were completed in the Central Ohio fields. Wildcat test in Geauga County found the Clinton sand dry. Franklin County test is being acidized.

Two wells were completed in the first Cow Run sand in Rome Township, Athens County; G. & K. Oil Co.'s No. 5 Wells Vandyke, Section 30, 30 bbl. of settled production from sand at 388-410 ft.; McBill Oil Co.'s No. 3 H. M. Antle, Section 30, 10 bbl. of settled production from sand 368-78 ft.

Ashland County, Lake Township, Roy Stewart's No. 2 Nancy Steward, Section 21, made 5 bbl. of oil the first 24 hours after a shot in Berea sand at 777 ft.

Cuyahoga County, Mayfield Village, Benedum-Trees' No. 1 G. White, shut in with 700,000 cu. ft. of gas after treating the Newburg with acid; sand at 2,809-44 ft.

Geauga County, Chardon Township, Benedum-Trees found the Newburg and Clinton sands dry in the S. L. Mather test in Section 19; Newburg sand at 3,242-50 ft.; Clinton at 3,612-73 ft. and 3,711-14 ft.; total depth 4,313 ft. Geauga County is southeast of Cleveland and southwest of Ashtabula.

Lawrence County, Union Township, Ray Gas Co.'s No. 3 North Kenova Developing Co., Section 31, was shot in the Ohio shales at 2,030-2,505 ft. with 3,500 lb. of gelatin and is a gas well, gaging 100,000 cu. ft. open flow.

Licking County, two small Clinton sand gas wells were completed in the Newark pool, Madison Township, Joe Ruben and others' No. 1 H. C. Neighbarger, second quarter, made 150,000 cu. ft. of gas at 2,654 ft. Mary Ann Township, Ohio Fuel Gas Co.'s No. 1 J. B. Hughes, Section 24, gaged 190,000 cu. ft. of gas at 2,634 ft.

Lorain County, Lagrange Township, Dillon & McTrederick's No. 1 M. C. Strutevant, Lot 2, is through the Clinton at 2,252 ft.; dry.

Morgan County, Deerfield Township, Joe Pierce's No. 1 C. M. Bankes, Section 21, made 8 bbl. of oil from the Berea the first 24 hours after a shot in sand at 1,196-1,215 ft.

Medina County, Harrisville Township, Pearsall and others' No. 1 V. A. Vandermark, Lot 27, is a 2-bbl. pumper at 424 ft.

Meigs County, Letart Township, Roy Proffit and others' No. 1 O. G. Shields, Section 5, was dry in the second Cow Run sand at 733 ft.

Monroe County, Malaga Township, C. E. Peters' No. 2, on fee property in Section 22, makes 50,000 cu. ft. of gas open flow from Berea sand at 2,009 ft.

There were no completions in the Lima area. Blacksten and others were acidizing their test in Franklin County, Madison Township, Section 11, on the E. J. Simms tract. The bottom 282 ft. of the Trenton was treated with 1,000 gal., the formation taking the acid very readily, requiring less than 200 lb. pressure. Results have not yet been acertained.

In Morgan County, Meigsville Township, Clyde Foraker and others' No. 1 Charles Dearth, reaming hole in the top of Corniferous lime from 3,538 to 3,756 ft., preparing the drill the Clinton horizon.

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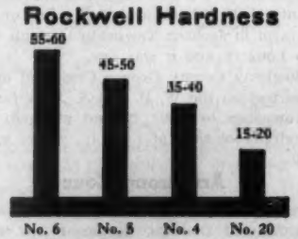

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Eastern Field Report

By STAFF CORRESPONDENT

Demand and Price Increase Keep Activity in Field High

PITTSBURGH, Pa., Nov. 6.—Activity in the lower eastern fields appears unusually high for this time of the year and may be attributed to the improved industrial demand for gas and the recent increases in the price structure of Pennsylvania Grade crude. Each week additional new work is listed and there are reports of new deep tests to be started.

SOUTHEAST OHIO

In Lodi Township, Athens County, C. A. Cody completed No. 4 John Jeffries, Fraction 17, in No. 6 Coal at 544 ft., gaging 100,000 cu. ft. a day. At Pratts Fork in Section 13, Lodi Township, Ross, Weimer & Ross completed No. 7 G. H. Ackley in the Mitchell sand at 530 ft. and it produced 5 bbl. the first day after shot.

In Licking County Murphy and Emerald Petroleum companies completed No. 3 Sarah Swisher in the Clinton sand at 2,612 ft., gaging 750,000 cu. ft.

In Medina County Preston Oil Co. completed No. 6 Roy A. Dague, Tract 16, Lot 5, Chatham Township, in the Berea grit at 397 ft. It produced 80 bbl. the first day after shot. In Section 13, same township, Oko Oil & Gas Co. completed No. 42 S. Ross in this formation at 585 ft. and it produced 5 bbl. the first day after shot.

In Morgan County J. B. Pearce and others completed a test on the Cyrus M. Bankes farm, NW¼ Section 21, Deerfield Township, in the Berea sand at 1,215 ft. It filled up 600 ft. in the 5-in. casing and is rated good for 5 bbl. a day.

In Muskingum County Gas Producing Co. of Ohio completed a test on the Albert L. Mautz farm, SE¼ Section 24, Brush Creek Township, in the Clinton sand at 3,962 ft., gaging 1,200,000 cu. ft. a day.

In Noble County J. L. Skinner completed a test on the Peter Brown farm, NE¼ Section 10, Jackson Township, in the Macksburg 800-ft. sand at 1,000 ft., gaging 104,000 cu. ft. a day.

In Perry County Atha Oil Co. drilled a test on the J. Thompson farm, SE¼ Section 8, Madison Township, through the Clinton sand to 3,225 ft. and it was dry.

In Washington County Henry Oil Co. completed No. 3 Mulinex heirs at Sackett Run in Section 27, Ludlow Township, in the Injun sand at 1,226 ft., gaging 400,000 cu. ft. At Wingetts Run in Section 34, Ludlow Township, H. W. Winland and others completed No. 4 W. Winland in the Injun sand at 1,411 ft. good for 140,000 cu. ft.

SOUTHWEST PENNSYLVANIA

Results were meager in the Southwest Pennsylvania fields with three dry holes and two gas wells. In Butler County H. E. Etheridge drilled a test on the Lewis Stokey farm in Jackson Township through the Fourth sand to 1,502 ft. and it was dry.

In Allegheny County George Gray and others deepened the test on the W. B. and A. Alter farm in Harrison Township to 3,007 ft. and plugged it back to the Hundred-foot sand at 1,515 ft., where it is a small gas well.

Armstrong County

In Cowanshannock Township, Armstrong County, Peoples Natural Gas Co. deepened the test on the Jacob Wagner farm to 3,602 ft. and it was dry. T. W. Phillips Gas & Oil Co. started a test on the William Harkleroad farm and drilled to 303 ft. and abandoned it.

In this township Peoples Natural Gas Co. is drilling at 1,515 ft. in the William Small test and at 1,200 ft. in the France Harkleroad test. T. W. Phillips Gas & Oil Co. is building a rig on the Jacob Boyer farm and a rig to deepen the Henderson Harkleroad test. Equitable Gas Co. has a location for No. 2 D. W. Raraigh. Louden Drilling Co. is cleaning out to deepen No. 1 A. G. Schaeffer.

In Boggs Township Peoples Natural Gas Co. has a location on the McCullough heirs farm. John Wray and others are down 600 ft. on the William Mateer farm and building rig for No. 3 Walter Upperman. In Manor Township they are spudding on the David Campbell farm.

In Kittanning Township Judson and others are drilling at 1,040 ft. in No. 2 W. J. Gray. In Kiskiminitas Township Apollo Gas Co. is moving in rig for No. 1 A. D. Tressler. In South Bend Township Shelocta Gas Co. is shut down in the Harve Reefer test.

Clarion-Westmoreland

In Limestone Township, Clarion County, T. Swartsfager and others are building rig for a second test on the William George farm. In Red Bank Township Owens Illinois Glass Co. is drilling at 1,840 ft. in the Lewis Keck test.

In Allegheny Township, Westmoreland County, the Apollo Gas Co. is moving rig on the D. M. Jones heirs' farm. Peoples Natural Gas Co. is drilling at 3,715 ft. on the R. Miller farm.

In Washington Township this company is drilling at 3,859 ft. in the Asa Biose test. In Bell Township Kiski Valley Gas Co. has locations on the James McBriar farm and the John Beighley farm.

Greene-Fayette

In Jefferson Township, Greene County, Moore, Orrill and others completed a second test on the William Rinehart farm at 1,412 ft. with 260,000 cu. ft. at 1,372-84 ft.

In Richhill Township, Greene County, Natural Gas Co. of West Virginia is rigging up on the Robert Burns farm. In Greene Township Fred Garrison is drilling at 1,160 ft. in the Henderson Coal Co. test.

In Nicholson Township, Fayette County, Duquesne Gas Co. is drilling at 600 ft. on the Agnes Kirk farm. In Menallen Township J. H. Carnell is drilling at 1,688 ft. on the Mike Uhrin test.

Washington County

In North Franklin Township E. H. Tague and others are rigging up on the John Peticord farm. In South Franklin Township Foley & Williams have rigged up a second test on the John G. Clark farm. Harry Williams and others are drilling at 350 ft. in No. 5 Jason Buchanan. A. V. Lewis and others are drilling at 1,618 ft. in No. 13 J. Frank Wilson with about 10,000 cu. ft. of gas.

In Amwell Township Shivers and others are drilling at 1,488 ft. on the Thomas J. Horn farm. In Morris Township Brummage and others are drilling at 2,075 ft. in the J. Jones test. Union Gasoline & Oil Corp. is down 2,030 ft. in No. 821 J. R. Andrews and 725 ft. in No. 824 H. A. Day.

In South Fayette Township, Allegheny County, Cox & Gibson are drilling at 1,475 ft. in the William M. Patterson test and Homer Nixon at 710 ft. in the James Hickman test.

On Chestnut Ridge, Fayette County, New Penn Development Co., William E. Snee, and others are still having trouble at 6,120 ft. on the Piedmont Coal Co. lease in North Union Township, having again encountered the lost bailer and slowly drilling it up.

In Armstrong County Peoples Natural Gas Co. is still shut down on the Lowry Martin farm in Wayne Township.

On Laurel Ridge these operators and E. G. Mueller have spudded on the Gregg L. Neel farm in Stewart Township. In Maryland New Penn Development Co. and William E. Snee on the Humberson farm on the Accident dome in Garrett County are drilling at 2,874 ft.

WEST VIRGINIA

Several small producers were completed in West Virginia. In Calhoun County Four Way Oil Co. completed a second test on the L. C. Harris farm in Washington district at 2,300 ft., with 6 bbl. after a 40-qt. shot at 2,264-94 ft.

In Sherman district, Calhoun County, W. H. Bickel completed a second test on the O. V. Bigler farm at 2,576 ft., good for 4 bbl. and 125,000 cu. ft. of gas without shot.

In Pleasants County Circle Oil Co. completed a test on the J. W. and Roy Myers farm in Jefferson district in the Squaw sand at 1,900 ft., good for 5 bbl. In Lafayette district H. F. Simonton and others drilled a second test on the Delphia O. Simonton farm through the Squaw sand to 2,065 ft. and it was dry.

In Ritchie County Mole Hill Oil & Gas Co. completed No. 3 Zackquel Darnell in Clay district in the Second Cow Run sand at 1,132 ft. good for 10 bbl. initially. In Grant district G. C. Grow completed No. 40 Henry Sharpnack in the Injun sand at 1,750 ft., a quarter-barrel pumper.

In Wirt County C. C. Hogg completed a test on the G. C. Grow No. 1-A in Clay district in the Salt sand at 546 ft., a 2-bbl. well.

Gas Wells

In Braxton County, Pittsburgh & West Virginia Gas Co. completed No. 7674 E. R. Hall in Birch district at 1,715 ft. with 550,000 cu. ft. of gas at 1,683-93 ft.

In Calhoun County McIntosh & Grimm completed a test on the J. R. Lockney farm in Sherman district at 2,023 ft., with 200,000 cu. ft. of gas at 1,968 ft. 24 hours after a 200-qt. shot.

In Gilmer County McCall Drilling Co. completed the test on the Marcellus Turner farm in Center district at 1,280 ft. with 292,000 cu. ft. of gas at 1,260-70 ft.

In Lincoln County Roy & McComas deepened No. 4 Oliver Adkins in Union district to 3,530 ft., good for 68,000 cu. ft. 12 hours after shot.

In Marion County Monongahela West Penn Public Service Co. deepened No. 67 W. D. Toothman in Lincoln district to 2,997 ft., the Fifth sand, and it gages 59,000 cu. ft.

In Ritchie County Pine Valley Products Co., Inc., completed No. 1 Stricker and McGinnis in Clay district in the Injun sand at 1,85 ft., gaging 30,000 cu. ft.

In Roane County W. B. Hughes, drilling as Big Spring Oil & Gas Co., completed the second test on the F. W. Westfall farm in Harper district in the Salt sand at 1,555 ft., gaging 1,250,000 cu. ft.

In Wayne County Fairfax Oil & Gas Co. drilled the test on the S. T. Hutchinson farm in Ceredon district to 3,136 ft., the Oriskany sand, and it was dry. There was a showing of gas in the Berea.

In Wetzel County C. B. Smith and others drilled a test on the Joseph Dawson farm in Green district through the Injun sand to 2,095 ft., and it was dry.

Oriskany Gas Field

In Poca district, Kanawha County, United Fuel Gas Co. completed the test on the D. C. Ingram and others farm at 5,119 ft. with the Oriskany sand at 5,074-5,115 ft., and a final gage of 2,516,000 cu. ft.

In the same district Glenn Oil & Gas Co. completed the test on the Laura Flowers farm at 5,381 ft. with the Oriskany sand topped at 5,293 ft. and a final gage of 3,183,000 cu. ft.

United Carbon Co. has a location for a test on the

(Continued on Page 76)

North and East Texas

By
D. H. STORMONT

Good Wells in New Pools in Northern and Eastern Texas

WICHITA FALLS, Tex., Nov. 6.—Rapid development of Wilbarger County's new two-horizon oil pool just west of the K.M.A. pool in Wichita County, together with a 1,700-bbl. well in the Rogers & Rogers pool in Montague County, and continued activity in the Hull-Silk pool in Archer County, highlighted activity in the North Texas district.

Indicating an intensive drilling campaign for its new Wilbarger County area, Consolidated Oil Co. completed a well, has two in the process of drilling and is rigging up at a mile-northwest outpost. The pool is just across the Wichita County line and was, in its early development stages, thought to be an extension of the K.M.A. field. Geological information and the discovery of a new 4,000-ft. pay horizon definitely established it as a separate field. Consolidated Oil Co. completed No. 1-J G. B. Ancell, in the northwest corner of Section 2, Block 7, H.&T.C. Survey, for 158 bbl. of oil, natural flow, in 3 hours, through ¾-in. choke on tubing. Lime pay was found at 3,746-65 ft., total depth. The flow was at the rate of 1,264 bbl. daily. The new well offsets the discovery well on the northeast. The operator's No. 2-J Ancell, 660 ft. east of the new producer, is drilling below 3,500 ft. The No. 3 C. C. Waggoner, Section 36, Block 6, H.&T.C. Survey, midway between a 3,700-ft. producer and the discovery well in the 4,000-ft. horizon, was drilling below 3,012 ft. Consolidated's No. 1 F. F. Waggoner, center of Section 25, Block 6, more than a mile northwest of closest production, was rigging up rotary and preparing to start operations. The area has four 3,700-ft. wells and one 4,000-ft. well. There are no deep dry holes within almost a mile of the field.

Activity in Montague County during the week included the completion of a 1,788-bbl. well in the Rogers & Rogers pool and the staking of a deep wildcat in the northeastern part of the county. One of the largest wells in the county is Thomas E. Nix's No. 1 Nocona Cemetery, Jacob Lenow Survey, on the eastern edge of the field. The well flowed 446 bbl. of oil in 6 hours or at the rate of 1,788 bbl. daily through casing perforations from two sands. The first sand was found at 4,352-60 ft., and the second, new sand, was at 4,424-39 ft. A south edge test in the area, Sunray Oil Co.'s No. 1 Burnett, was indicating a producer in the lower and recently opened pay section. Sand was logged at 4,630-41 ft. and sandy shale at 4,641-53 ft., total depth. Seven-inch casing has been cemented at 4,630 ft.

In the northeastern part of Montague County Youngblood & Foree have made location for No. 1 Mrs. W. L. Admire, in the southeast corner of the Admire tract, in the G. W. Fisher Survey, 2½ miles north of Bonita. Test is contracted to 4,500 ft. and is expected to test the Ellenburger formation.

In the Bonita-sand pool (Benton & Holmes) in eastern Montague County, Continental Oil Co. has announced that it will deepen its No. 1 W. R. Rich, G. R. Jaques Survey, Abstract 393, approximately ¾ mile east of the pool proper, to the 4,000-ft. level. The wildcat was abandoned in 1935 at a total depth of 2,925 ft. The field now has a 3,800-ft. granite wash pay horizon which will be the objective of the test.

The most decisive link well between the Hull-Silk and Sikes pools of northern Archer County was brought in during the week to definitely link these two 4,300-ft. producing areas. Cato Oil Co.'s (Wichita Falls) No. 1 Anderson, in the southwest corner of 100-acre tract in the J. S. Brooks Survey, Abstract 17, about ⅛ mile from the producing limits of each of the pools, drilled oil sand at 4,353-55 ft., total depth. Drilling has been suspended to run casing before further penetrating the pay. This makes the field some 5 miles long and about ⅛ mile wide at the northeast end and 1¼ miles wide at the southwest end. There are 17 locations staked in the field and 26 wells either drilling or waiting for completion gages.

The Walnut Bend pool of northern Cooke County, discovered by Sinclair Prairie Oil Co. and later entered by Cox & Hamon, now has a third operator in the area. Magnolia Petroleum Co. announced a location for an eastern outpost, No. 1 G. L. Ransey estate on acreage offestting Cox & Hamon's William Neu lease in the B.B.B.&C. Survey. The location is three sites out from production and two from a drilling well. Only the northern limits of the field have been defined and there are two lower Strawn-sand pays and one Simpson-pay section.

An indicated ¼-mile west extension on the north end of production in the Green Canyon-lime pool of Baylor County was seen during the week when British American Oil Producing Co. drilled plug from its No. 2-C Green, C SE NE Section 215, T.&N.O. Survey. Pay was logged at 2,583-92 ft. and commercial production was believed possible. The company's No. 3-C Green, ¼ mile south of the indicated well, was drilling below 2,150 ft. The company is rigging up No. 1 Holman, a 4,000-ft. wildcat, in Block 194, T.&N.O. Survey, approximately 6 miles northwest of the pool.

NORTH TEXAS COMPLETIONS

Archer County

L. T. Burns' No. 5 Ahrens, 4,262-4,327 ft., 1,120 bbl. Chapman & McFarlin's No. 2 L. F. Wilson A, 3,862-69 ft., 1,072 bbl. Continental Oil Co.'s No. 3 Wilson-McCrory, 4,303-50 ft., 832 bbl. H. H. Fraser's No. 1 W. M. Coleman, 2,504 ft., dry. Helmerich & Payne and Blackwell's No. 6 L. F. Wilson, 3,840-57 ft., 1,032 bbl. Bert L. Ligon's No. 1 L. F. Wilson B, 4,415 ft., dry. Petroleum Producers and United Production Co.'s No. 3 J. N. Shephard, 4,280-4,360 ft., 984 bbl. Southern Petroleum Exploration, Inc.'s No. 4 S. D. Johnson, 4,299-4,324 ft., 898 bbl.

Clay County

L. T. Burns' No. 3 Browning, abandoned location. Doug Gerard's No. 1 E. A. Glasgow, 250 ft., dry. Harvey Drilling Co.'s No. 2 C. T. Taylor, 1,186 ft., dry. Republic Natural Gas Co.'s No. 82 F. B. Wyatt, 651-54 ft., 5 bbl.

Cooke County

J. G. Beard's No. 3 Voth, 1,643-65 ft., 5,500,000 cu. ft. of gas. McDaniel & Beechrel's No. 3 Joe Wiesman, 694-710 ft., 23 bbl. M. Staniforth's No. 5 Voth, 1,667-73 ft., 320 bbl.

Hardeman County

G. T. Kimbell and others' No. 1 M. T. Willing, 5,510 ft., dry.

Jack County

B. Fleeger's No. 1 G. E. Winn, 3,263-92 ft., 25 bbl. Ben Wells and others' No. 1 L. Carter, 410 ft., dry.

Montague County

T. E. Nix's No. 1 Cemetery Lot, 4,320-4,444 ft., 1,788 bbl.

Wilbarger County

Consolidated Oil Co.'s No. 2 G. B. Ancell, Jr., 3,774-3,802 ft., 744 bbl. Waggoner Refining Co.'s No. 29 Waggoner AA, abandoned lcation.

Wichita County

Buffalo Oil Co.'s Nos. 18 and 20 Ferguson, abandoned locations. L. T. Burns' No. 9 K. T. Goetze, 1,702 ft., dry. E.C. Oil Co.'s No. 17 Anna Mangold, 3,780-3,824 ft., 616 bbl. Fisher & Dudley's No. 8 F. P. Warren, 1,355-75 ft., 308 bbl. Golding & Cochran's No. 8 D. R. Preston, 3,920-60 ft., 440 bbl. W. B. Hamilton's No. 1 Mrs. H. Lalk, 2,105 ft., dry. G. E. Kadane & Sons' No. 1 J. A. Seay, 3,687-3,836 ft., 744 bbl. George Proctor and others' No. 38 Ed Foster A, 1,950-53 ft., 50 bbl. George Proctor and others' No. 39 Ed Foster A, 1,951 ft., dry. George Proctor and others' No. 40 Ed Foster A, 580-95 ft., 10 bbl. Rubsam & Hunter's No. 21 W. D. McClure B, 450 ft., dry. Southport Petroleum Corp.'s No. 6-A State Lands, 3,816-40 ft., 600 bbl.

Young County

Graham Royalty Co.'s No. 16-A Mrs. O. W. Mathews, 709-33 ft., 5 bbl. T. D. Humphrey's No. 1 Jeffery A, 3,797-3,915 ft., 35 bbl. E. W. Hunt's No. 1 H. M. Goss, 1,212-21 ft., 5 bbl. L. A. Long's No. 1 W. A. Ribble, 2,927-47 ft., 20 bbl. L. A. Long's No. 1 S. P. Taylor, 3,934-46 ft., 574 bbl. L. A. Long's No. 4 R. M. Williams C, 2,465-2,563 ft., 30 bbl. L. A. Long's No. 5 R. Williams C, 2,472-2,578 ft., 60 bbl. Lupton & McLester's No. 5 J. A. Brown, 3,735-3,820 ft., 150 bbl. Moran & Sons, Inc.'s No. 1 R. Campbell, 1,050 ft., dry. S. A. Thompson's No. 1 J. C. Vaughan A, 2,548-65 ft., 25 bbl. H. Zweifel's No. 2 W. H. Martin, 3,855-4,000 ft., 250 bbl.

EASTERN TEXAS AREA

DALLAS, Tex., Nov. 6.—Included in the week's developments in eastern Texas were the completion of one of the three Lone Star Gas Co. and Trinity Gas Co.'s tests in the Grapeland area of Houston County; the completion of Grapeland Oil Co.'s No. 1 Guice, also in the Grapeland area; a showing of gas amounting to 8,000,000 cu. ft. daily in the Pettit formation of lower Trinity at Limestone County's Samuel No. 1 Barron, the completion of a 175-bbl. southeast extension to Anderson County's portion of the Cayuga field, and continued development in the Flag Lake and Bazette areas of Henderson and Navarro counties.

The relatively unexplored Grapeland gas and distillate areas of northern Houston County, discovered in 1936, and until a week ago embracing only three gas wells and one oil well, has two new gas wells in the completion stage. Grapeland Oil Co.'s No. 1 Guice, J. D. J. Porcilla Survey, 2 miles west of Grapeland, gaged 93,000,000 cu. ft. of gas daily on various-sized chokes in 24 hours. Sand was topped at 5,908 ft. and flow was made through perforation in casing at 5,920-40 ft. and at 5,911-16 ft. Casing pressure gaged 1,330 lb. and tubing pressure gaged 375 lb. Another well in the area, Lone Star Gas Co. and Trinity Gas Co.'s No. 1 Denson, Breece Survey, perforated casing at 6,018-32 ft. and was last reported cleaning out with considerable gas showing. The partnership has two other tests active in the field, No. 1 Bean, drilling at 5,908 ft. and No. 1 C. W. Smith, drilling at 4,950 ft.

The lower Trinity exploration program in the district received encouragement and a setback during the week. In Smith County Dr. V. V. Grant's No. 1 J. W. Waters, J. Stapler Survey, 1½ miles northeast of Garden Valley, was dry and abandoned at a total depth of 5,893 ft. without having drilled into the Trinity formations, as previously announced. In Limestone County M. Samuel and others' No. 1 Barron, W. G. McKenzie Survey, 4 miles northwest of Thornton, was showing an estimated 8,000,000 cu. ft. of gas daily in the Pettit formation of the basal Trinity sections. The wildcat was drilled to a total depth of 6,030 ft. and plugged back to 5,610 ft. At last reports the test was shut down for orders at the plugged-back depth. There are some 10 other active deep Trinity tests in the eastern Texas district at present.

Extending production in the Cayuga pool of Anderson County slightly to the southeast, Carter-Gragg Oil Co.'s No. 2 W. H. C. Goode, Anderson County school lands, was flowing into tanks and is estimated at about 175 bbl. daily. Flow was through ⅛-in. choke under pressure of 700 lb. on casing and 450 lb. on tubing. Hole is bottomed at 4,010 ft. The operators are clearing

location for No. 3 Goode, 933 ft. south of the new well.

Since the completion of the discovery well in the Bazette area just across the Trinity River, in southern Henderson County, activity has shown a slight pick up in the original Flag Lake field of northwestern Henderson County. Completion of Texas Co.'s No. 1 Trinity farms, C. E. Miller Survey, as an extension to the southern part of the field, led to the staking of the discovery well in the Bazette field. New location for the southern part of Flag Lake pool is Texas Co.'s No. 2 Trinity farms, 400 ft. south and 20° west of south of the No. 1 producer. The State of Texas recently offered the Trinity River beds between the two areas for leasing, indicating development for that intervening area. The Bazette area was assured its third producer as Topaz Oil Co. and Butler & Calhoun's No. 4 Trammel, south side well, cored ahead toward the Woodbine sand at 3,000 ft. It is 660 ft. south and slightly west of the No. 2 Trammel, a producer at 3,004 ft. The No. 3 Trammel missed the Woodbine sand pay of the area and was dry and abandoned 2 weeks ago.

EAST TEXAS FIELD COMPLETIONS

(1-hour gages)

Gregg County—Longview Area

Fred Birdsong's No. 1 J. R. Smith, 3,666-69 ft., 66 bbl. B. F. Phillips' No. 4 fee, 3,625-48 ft., 60 bbl. B. F. Phillips' No. 5 fee, 3,625-40 ft., 100 bbl. Stanolind Oil & Gas Co. and Tide Water Associated Oil Co.'s No. 6-B T. Snoddy, 3,571-3,632 ft., 41 bbl.

Gregg County—Kilgore Area

J. J. Jenkins' No. 3 J. T. Crim, 3,538-3,565 ft., 40 bbl.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour gages)

Anderson County

In the Cayuga field Roeser & Pendleton's No. 4 V. Bowyer, E. Ritler Survey, topped sand at 4,026 ft. and flowed 85,000,000 ft. of gas daily under pressures of 1,370 lb. on both casing and tubing, total depth 4,067 ft.

Houston County

In the Grapeland gas area Grapeland Oil Co.'s No. 1 J. J. Guice, J. D. J. Procilla Survey, 2 miles west of town of Grapeland, topped sand at 5,908 ft. and flowed 93,000,000 cu. ft. of gas daily through perforations in casing from 5,920-40 and 5,911-16 ft.

In the Navarro Crossing field Humble Oil & Refining Co.'s No. 1 Kennedy, J. G. Thompson Survey, flowed 5,000,000 cu. ft. of gas daily with 7 bbl. distillate per 1,000,000 cu. ft. of gas through perforations in casing at 5,850-60 ft.

Smith County

A wildcat, Dr. V. V. Grant's No. 1 Waters, J. Stapler Survey, 1½ miles northeast of Garden Valley, was dry and abandoned at a total depth of 5,893 ft. after topping the Pecan Gap at 3,375 ft. and the Austin chalk at 4,945 ft.

Titus County

In the Talco field Humble Oil & Refining Co.'s No. 2 Sallie Blalock, J. F. Lund Survey, pumped 364 bbl. daily from pay from 4,317 to 4,330 ft.

La.-Ark. Fields

(Continued from Page 66)

a small producer in the thin oil section of the lime.

The Magnolia field of Columbia County was limited on the northeast edge this week by failure of the Atlantic Refining Co.'s No. 1-B Spain. The edge test was drilled on a 20-acre tract by special permit from the Arkansas Oil and Gas Commission, but it encountered the porous lime below the water level.

East Texas Border

In Cass County, Texas, a slight south outpost to production in Rodessa, G. Scott Hammond's No. 1 Price was completed for an initial flow of 20,000,000 cu. ft. of gas. It is bottomed at 5,955 ft.

The Joaquin gas-condensate field of Shelby County received a ½-mile westward extension with completion of Natural Gas Distribution Corp.'s No. 1 Childress. The well is producing gas and condensate through perforations shot at 4,840-60 and 4,874-86 ft. but no gages have yet been reported.

ARKANSAS COMPLETIONS

Magnolia—Columbia County

Atlantic Refining Co.'s No. 1-B L. Spain, S½ NW SW Section 18-17-19, dry and abandoned at 7,659 ft.; porous lime topped at 7,647 ft. contained salt water.

Troy—Nevada County

Berry Asphalt Co.'s No. 1 Calloway-Howell, NE cor. NE SW Section 5-14-20, salt water and abandoned, total depth 1,192 ft.

NORTH LOUISIANA COMPLETIONS

Bellevue—Bossier Parish

Oils Finance Corp.'s (former J. B. Stovall) No. 8 Arkansas Fuel Oil fee, NE SE Section 15-19-11, pumping 10 bbl., total depth 405 ft.

Caddo—Caddo Parish

R. L. Hall's No. 2 Caddo Levy Board, Section 26-21-16, pumping 15 bbl., total depth 942 ft. A. R. Hancock's No. 7 Standard Oil Co. fee, Section 18-21-15, dry and abandoned 1,720 ft. McDonald & Campbell's No. 13 Youree, Section 7-20-14, dry and abandoned at 2,275 ft. G. H. Neighbors' No. 1 Thrash, Section 36-21-16, pumping 20 bbl., total depth 1,590 ft. J. S. Pate's No. 1 Files, Section 7-21-15, pumping 5 bbl. oil and 50 bbl. of salt water, total depth 1,753 ft. Rembert & Morgan's No. 1 E. R. Hudson, Section 11-20-16, flowing 175 bbl. through open tubing, total depth 1,606 ft. Joe G. Strahan's No. 2-A Hart, Section 29-21-16, flowing 500 bbl. through 2-in. tubing and open casing, total depth 2,385 ft.

Wildcat—Caddo Parish

Temple Oil Co.'s No. 1 Bostick, 990 ft. north and 300 ft. west of SE cor. SW¼ Section 13-22-16, flowed 2,825 bbl. through open tubing and casing, and 600 bbl. through 22/64-in. choke; Woodbine sand at 2,548-58 ft., total depth 2,558 ft.

Cotton Valley—Webster Parish

Midstates Oil Corp.'s No. 1 W. L. Coyle, 100 ft. northwest C NE SE Section 20-21-10, 720 bbl., ⅝-in. choke, tubing pressure 400 lb., perforated casing 8,526-33 ft. in D sand, total depth 8,711 ft.

MISSISSIPPI COMPLETIONS

Wildcat—Hinds County

Love Petroleum Co.'s No. 1 State Blind Institution, 315 ft. north and 150 ft. east of SW cor., SE SE Section 34-6n-1e, dry and abandoned, total depth 2,662 ft. in chalk.

Wildcat—Lafayette County

Adam Oil & Gas Co.'s No. 1 Z. E. Lewellen, 990 ft. from west line, 330 ft. from north line NE NW NW Section 9-10s-1w, dry and abandoned, total depth 4,167 ft.

EAST TEXAS BORDER COMPLETIONS

Smithland—Marion County

J. D. Reynolds' No. 2-B Terry estate, W. Coore Survey, flowed 28 bbl. through 2½-in. tubing, total depth 2,330 ft.

Rodessa—Cass County

G. Scott Hammond's No. 1 Price, C S½ west 40 acres of a 125-acre tract in Charles Amer Survey, 20,000,000 cu. ft. of gas, total depth 5,955 ft., set 5½-in. casing at 5,865 ft.

West Texas Fields

(Continued from Page 61)

pay at 2,170 ft. and drilled 4 ft. of saturation in No. 1-F Morris, 1,320 ft. from the south and west lines of the H.T.&B. Survey, ½ mile northeast of the pool proper. A string of 6⅝-in. casing has been moved in for completion. The discovery producer, Anzac Oil Corp.'s No. 4-C Morris, was completed for the largest well in Coleman County last summer when it flowed 2,250 bbl. initially from pay at 2,174-90 ft. Several weeks later the same company brought in No. 5-C Morris for 1,234 bbl. daily from 2,180 to 2,191 ft. as the second well in the field.

Nolan County's prospective oil producer, Green & Owens' No. 1 C. H. Tipton, Section 43, Block 19, T.&P. Survey, estimated at 450 bbl. daily several weeks ago, was last reported swabbing and cleaning out at 5,140 ft. with a daily yield of 65 bbl. of oil and 13 bbl. of water. Saturation was drilled from 5,135 to 5,138 ft.

Deep wildcat test 2 miles northeast of the Ivy pool in northwestern Shackelford County has been staked by Jones & Stasney and Groover & Rose of Albany. Test will be the No. 1 Winnie Wendt, 440 ft. from the north and west lines of Section 13, Block 3, H.&T.C. Survey. Production will be sought in the Palo Pinto lime horizon producing in the Ivy, Avoco and Griffin pools.

WEST CENTRAL TEXAS COMPLETIONS

Bosque County

Reese & Rosencrantz's No. 1 Greenwade, abandoned location.

Coleman County

Coleman Oil & Gas Co.'s No. 1 Powell, 2,230-79 ft., 4,500,000 cu. ft. of gas. Fair's No. 1 Reeves, abandoned location.

Comanche County

Choate & Armstrong's No. 1 Seale, dry and abandoned at 700 ft. Simpson, Beard, and Taylor's No. 1 Kirk, junked and abandoned at original total depth after being reinstated to deepen.

Eastland County

Hickok Production Co.'s No. 1 Hazel, 3,398-3,428 ft., 100,000 cu. ft. of gas.

Jones County

Brown Eagle Oil Co.'s No. 5 Guitar trust, 2,143-50 ft., 169 bbl.; (old well drilled deeper). Consolidated Oil Co.'s No. 3 Cox-Hamilton, abandoned location. Fain-McGaha Oil Corp.'s No. 5 Lewis, 1,910-31 ft., 288 bbl. Hickok Production Co. and Reynolds' No. 1 Williams, dry and abandoned at 3,385 ft. A. H. Tarver's No. 1 A. J. Barkley, topped Ellenburger at 5,295 ft. and dry and abandoned at total depth of 5,436 ft.

Palo Pinto County

Goble-Moore Drilling Co.'s No. 3-A Costello, 1,396-1,408 ft., 10 bbl.

Shackelford County

J. P. Alexander's No. 1 fee, 537-582 ft., 50,000 cu. ft. of gas. Danciger Oil & Refining Co., Inc.'s No. 7 McCown, 3,189-95 ft., 468 bbl. in 4½ hours. Roeser-Pendleton and Continental Oil Co.'s No. 41-A-84 Cook, dry and abandoned at total depth of 1,583 ft.

Stephens County

Horwitz & Oldom's No. 2 Dance, 3,552-82 ft., 656 bbl. in 8 hours.

PANHANDLE FIELD COMPLETIONS

(24-hour gages)

Gray County

Amagray Oil Co.'s No. 1 S. A. Cobb, 2,695-2,725 ft., 40 bbl. Gayden Oil Co.'s No. 3 W. C. Archer, 3,222-68 ft., 630 bbl. Gray County Production Co.'s No. 5 A. Chapman, 2,585-2,645 ft., 167 bbl. Manstan's No. 9 R. Sullivan, 3,115-3,232 ft., 419 bbl.

Hutchinson County

Gray County Production Co.'s No. 2 W. E. Herring, 3,234-37 ft., 20 bbl. oil plus 50 bbl. water. Texas Co.'s No. 17 T. D. Lewis, 2,900-60 ft., 401 bbl. Huber Petroleum Co.'s No. 6-A J. F. Weatherly, 2,935-3,028 ft., 2,260 bbl. Kewanee Oil Co.'s No. 39 T. D. Lewis, 2,961-3,050 ft., 176 bbl. J. R. Phillips Employes' No. 3 T. J. Thompson, 2,960-3,020 ft., 420 bbl. Stanolind Oil & Gas Co.'s No. 14 Ware A, 3,055-3,176 ft., 251 bbl. Stanolind Oil & Gas Co.'s No. 14 Ware B, 3,025-2,160 ft., 172 bbl.

Moore County

Phillips Petroleum Co.'s No. 1 O. E. McDowell, 2,885-3,253 ft., 42,000,000 cu. ft. of gas. Texoma Natural Gas Co.'s No. 6-M R. S. Coon, 2,648-2,865 ft., 10,486,000 cu. ft. of gas.

Wheeler County

Christie & Hickman's No. 2 J. J. Perkins, 2,446-78 ft., 246 bbl.

Eastern Fields

(Continued from Page 74)

W. J. Bumgardner and others farm. This company is drilling at 3,008 ft. in the E. P. Higginbotham test.

Columbian Carbon Co. is cleaning out the Tignor and Griffith test in Poca district at 5,154 ft., with a gage of 386,000 cu. ft. after shot. This company topped the Oriskany sand at 5,018 ft. in the H. H. Parsons test and at 5,092 ft. there is a gage of 417,000 cu. ft. No. 2 is drilling at 3,822 ft.; the John Price test, at 1,608 ft.; Walter Payne test, 1,145 ft..

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status—
General Pet. Corp., No. 15 Poggi, Torrance, Los A.	30- 4-13	5,140	O.S. drlg.
Shell Oil, No. 100 Reyes, Dominguez, Los Angeles	33- 3-13	5,153	sd. sh. drlg.
Havenstrite, R. E., No. 1 Larronde, Doming., L. A.	32- 3-13	2,266	sd. sh. drlg.
Union Oil, No. 35 Rosecrans, Rosecrans, Los Ange.	19- 3-13	7,440	sd. sh. drlg.
Universal Cons'd. Oil, No. 18 Trust, Rose., Los An.	18- 3-13	5,577	sd. sh. drlg.
Casa Grande Oil, No. 1 Lopez, San Fernando, L. A.	1- 2-15	2,140	gr. sd. drlg.
Tide Water A. O.. No. 12 Porter, Aliso Can., L. A.	27- 3-16	4,721	sd. sh. drlg.
Tide Water A. O., No. 11 Fernando, Aliso C., L. A.	27- 3-16	5,154	O.S. drlg.
Tamas Oil, No. 1 Perkins, Newhall, Los Angeles	14- 3-16	2,350	sd. sh. drlg.
Barnsdall Oil, No. 8 R.S.F., Newhall, Los Angeles	27- 4-17	4,070	sd. sh. drlg.
Bernstein, Simon, No. 12 Harbor, Wilmington, L. A.	35- 4-13	2,396	sd. sh .drlg.
Brookline Oil, No. 1 Nix, Wilmington, Los Angeles	35- 4-13	5,784	P.B. 3,665
Dumm Bros. Pet., No. 3 Harbor, Wilming., Los A.	35- 4-13	2,288	sd. sh. drlg.
Interstate Inv., No. 2 Harbor, Wilmington, Los A.	35- 4-13	2,581	redrlg. 2,198
Long Beach Dev., No. 3-W Harbor, Wilming., L. A.	3- 5-13	4,057	completing
Long Beach Dev., No. 5-W Harbor, Wilming., L. A.	3- 5-13	3,925	completing
Long Beach Dev., No. 6-W Harbor, Wilming., L. A.	3- 5-13	3,942	sd. sh. drlg.
Long Beach Dev., No. 7-W Harbor, Wilming., L. A.	3- 5-13	4,034	completing
Long Beach Dev., No. 12-X Harbor, Wilming., L. A.	2- 5-13	3,958	O.S. drlg.
McWherter, C. L., No. 4 Channel, Wilming., L. A.	2- 5-13	3,098	pmp. 75 b.d.
Morgan, Roy, No. 1 Ruth, Wilmington, Los Angeles	35- 4-13	3,420	flow 130 b.d.
Royalty Service Corp., No. 3 Packard, Wilm., L. A.	33- 4-13	5,716	completing
Richfield Oil Corp., No. 32 Pac. Dock, Wilm., L. A.	35- 4-13	2,294	sd. sh. drlg.
Signal O. & G., No. 4-S.P., Wilmington, Los Ange.	3- 5-13	4,172	flow 450 b.d.
Union Pacific R. R., No. 118, Wilmington, Los An.	34- 4-13	3,611	flow 565 b.d.
Union Pacific R. R., No. 119, Wilmington, Los An.	3- 5-13	3,637	O.S. drlg.
Union Pacific R. R., No. 120, Wilmington, Los An.	3- 5-13	4,021	flow 1,040 b.d.
Union Pacific R. R., No. 124, Wilmington, Los An.	4- 5-13	1,992	sd. sh. drlg.
Union Pacific R. R., No. 19-E, Wilmington, Los A.	3- 5-13	2,877	sd. sh. drlg.
Union Pacific R. R., No. 20-E, Wilmington, Los A.	3- 5-13	4,047	O.S. drlg.
Kern Oil, No. 31 Monterey, Montebello, Los Ange.	2- 2-12	4,851	sd. sh. drlg.
Kern Oil, No. 35 Monterey, Montebello, Los Ange.	2- 2-12	2,975	sd. sh. drlg.
Union Oil, No. 1 Wilcox, Montebello, Los Angeles	11- 2-12	6,248	to deepen
Union Oil, No. 6 Wilcox, Montebello, Los Angeles	11- 2-12	4,765	sd. sh. drlg.
Union Oil, No. 35 La Merced, Montebello, Los Ang.	1- 2-12	4,988	sd. sh. drlg.
Union Oil, No. 10 Howard & Smith, Monte., Los A.	11- 2-12	7,615	flow 430 b.d.
Angle Oil, No. 1 Community, Montebello, Los Ang.	11- 2-12	2,866	sd. sh. drlg.
Beacon Oil, No. 1 Caneer, Montebello, Los Angeles	11- 2-12	7,475	O.S. drlg.
Bush Oil, No. 1 Mihlfred, Montebello, Los Angeles	3- 2-12	7,253	sd. sh. drlg.
Bush Oil, No. 1 Zanetti, Montebello, Los Angeles	3- 2-12	7,692	O.S. drlg.
Caminol, No. 2-16 Cowan, Montebello, Los Angeles	2- 2-12	7,640	completing
Caminol, No. 3-17 Cowan, Montebello, Los Angeles	3- 2-12	6,043	sd. sh. drlg.
C. A. P. Oil, No. 1 Dutch, Montebello, Los Angeles	11- 2-12	7,191	sd. sh. drlg.
Crestline Oil, No. 1 Beverly, Montebello, Los Ange.	11- 2-12	7,640	completing
Crail Bros., No. 2 Cowan, Montebello, Los Angeles	1- 2-12	7,635	O.S. drlg.
Dutch Oil, No. 1 Schelnik, Montebello, Los Angeles	3- 2-12	7,282	P.B. 7,135
Fremont Oil, No. 1 Aldrich, Montebello, Los Angel.	12- 2-12	1,997	sd. sh. drlg.
Fullerton Oil, No. 2 Scott, Montebello, Los Angel.	1- 2-12	7,630	P.B. 7,613
Graham-Loftus Oil Corp., No. 2 Coffman, M., L. A.	11- 2-12	7,652	completing
Golden Eagle Oil Corp., No. 1 Lehman, Mon., L. A.	10- 2-12	3,177	sd. sh. drlg.
Hathaway Oil, No. 2 Dore, Montebello, Los Angel.	11- 2-12	7,475	sd. sh. drlg.
Herley-Kelly, Inc., No. 2 De Staute, Monte., Los An.	11- 2-12	2,962	sd. sh. drlg.
Larson Drlg., No. 3 Van Deusen, Monte., Los Ang.	11- 2-12	6,082	sd. sh. drlg.
Mabee, J. E., No. 36 Monterey, Montebello, L. A.	3- 2-12	7,750	flow 490 b.d.
Master Pet., No. 1 Grant, Montebello, Los Angeles	2- 2-12	4,862	sd. sh. drlg.
Mont. Res. Oil, No. 1 Reservoir, Montebello, L. A.	2- 2-12	7,637	flow 575 b.d.
Mono Oil, No. 1 Foreman, Montebello, Los Angeles	2- 2-12	7,375	O.S. drlg.
Montebello Oil, No. 1 Nordon, Montebello, Los An.	3- 2-12	7,067	sd. sh. drlg.
Pacific-Amer. Oil, No. 1 Green, Montebello, Los A.	11- 2-12	7,649	O.S. drlg.
Pueblo Oil, No. 2 Bird, Montebello, Los Angeles	11- 2-12	3,855	sd. sh. drlg.
Pongratz Pet., No. 2 Newmark, Montebello, Los A.	3- 2-12	7,440	sd. sh. drlg.
Sunset Oil, No. 1 Robinson, Montebello, Los Ange.	12- 2-12	6,452	sd. sh. drlg.
Star Pet., No. 1 Caneer, Montebello, Los Angeles	11- 2-12	6,986	sd. sh. drlg.
Texas, No. 1 Wilcox, Montebello, Los Angeles	3- 2-12	7,687	O.S. drlg.
Traders Oil, No. 2 Center, Montebello, Los Angeles	2- 2-12	6,987	cleaning out
United Mont. Oil, No. 1 Lot, Montebello, Los Ange.	11- 2-12	7,666	completing
United Mont. Oil, No. 2 Lot, Montebello, Los Ange.	11- 2-12	7,650	completing
United Mont. Oil, No. 3 Lot, Montebello, Los Ange.	11- 2-12	7,094	sd. sh. drlg.
Winlock Oil, No. 1 South, Montebello, Los Angeles	11- 2-12	2,983	sd. sh. drlg.
Wood-Callahan Oil, No. 1 Thill, Montebello, Los An.	11- 2-12	7,390	sd. sh. drlg.
Wood-Callahan Oil, No. 2 Todd, Montebello, Los An.	2- 2-12	2,861	sd. sh. drlg.
York Oil, No. 1 Long, Montebello, Los Angeles	3- 2-12	7,655	completing
York Oil, No. 6 Mulholland, Montebello, Los Ange.	2- 2-12	7,443	tested wet
Kelso, F. W., No. 1 Brea, Puente Hills, Los Angeles	12- 2-10	2,405	idle
Dormax Oil, No. 1 Signal, Long Beach, Los Angel.	30- 4-12	9,896	O.S. drlg.
Atlantic Oil, No. 12 Signal, Long Beach, Los Angel.	19- 4-12	3,230	pmp. 165 b.d.
Richfield Oil Corp., No. 8-B City, Long Beach, L. A.	29- 4-12	4,175	sd. sh. drlg.
El Hondo Pet., No. 1 Venago, Long Beach, Los An.	24- 4-13	8,895	sd. sh. drlg.
Rolling Hills Pet., No. 1 Weston, Palos V., Los An.	27- 4-14	6,500	milling
Great Northern Oil, No. 1 Oak, Richfield, Los An.	28- 3- 9	2,296	idle
Sonwell Oil, No. 1 Anaheim, East Coyote, Orange	13- 3-10	3,837	P.B. 3,400
Union Oil, No. 21 Hole, East Coyote, Orange	22- 3-10	4,590	sd. sh. drlg.
Master Pet., No. 1 Wright, East Coyote, Orange	19- 3- 9	4,160	idle
Southwest Expl., No. 21 State, Hunt. B., Orange	10- 6-11	4,040	sd. sh. drlg.
Owen, W. D., No. 1 Montgomery, Hunt. B., Orange	36- 5-11	3,904	sd. sh. drlg.
Petremont Oil, No. 2 Burton, Huntington B., Orange	36- 5-11	4,470	recmt. 4,410
Alabama Oil, No. 1 Rochester, Hunting. B., Orange	2- 6-11	1,898	sd. sh. drlg.

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status—
Union Oil, No. 2-3 O'Donnell, Santa Maria, S. Bar.	29-10-34	5,350	completing
Union Oil, No. 6 Vicente, Santa Maria, Santa Bar.	21-10-34	3,297	sd. sh. drlg.
Lomas, E. H., No. 1 Reg, Santa Maria, Santa Barb.	29-10-34	5,601	flow 2,000 b.d.
Gerard, W. R., No. 2 Breneiser, Santa Maria, S. B.	27-10-34	4,520	sd. sh. drlg.
Sunset Oil, No. 1 Shore, Carpinteria, Santa Barbara	32- 4-25	3,413	gr. sd. drlg.
Rilling, H. L., No. 1 Camden, South Mt., Ventura	13- 3-21	1,449	sd. sh. drlg.
Savage Oil, No. 2 Calumet, Shiells Canyon, Ventura	3- 3-19	2,965	sd. sh. drlg.
Renard Oil Corp., No. 1, Sespe, Ventura	6- 4-19	716	idle
Continental Oil, No. 12 Grubb, San Miguelito, Ven.	24- 3-24	7,310	O.S. drlg.
Continental Oil, No. 14 Grubb, San Miguelito, Ven.	24- 3-24	1,962	sd. sh. drlg.
C. C. M. Oil, No. 2-B Hobson, Rincon, Ventura	8- 3-24	4,046	milling
C. C. M. Oil, No. 28-B Hobson, Rincon, Ventura	16- 3-24	2,451	sd. sh. drlg.
Tide Water A. O., No. 42 V.L.W., Vent. Ave., Ven.	23- 3-23	8,806	sd. sh. drlg.
Tide Water A. O., No. 44 V.L.W., Vent. Ave., Ven.	23- 3-23	8,482	sd. sh. drlg.
Tide Water A. O., No. 15 McGonigle, Vent. Ave., V.	23- 3-23	9,360	O.S. drlg.
Tide Water A. O., No. 16 McGonigle, Vent. Ave., V.	23- 3-23	7,174	sd. sh. drlg.
Tide Water A. O., No. 121 Lloyd, Vent. Ave., Ven.	23- 3-23	8,920	sd. sh. drlg.
Tide Water A. O., No. 21 Hartman, Vent. Ave., V.	22- 3-23	5,884	fish D.P.
Shell Oil, No. 103 Taylor, Ventura Avenue, Ventura	21- 3-23	6,490	sd. sh. drlg.
Shell Oil, No. 106 Taylor, Ventura Avenue, Ventura	29- 3-23	5,451	sd. sh. drlg.
Shell Oil, No. 107 Taylor, Ventura Avenue, Ventura	29- 3-23	4,652	sd. sh. drlg.
Shell Oil, No. 108 Taylor, Ventura Avenue, Ventura	29- 3-23	4,991	sd. sh. drlg.
General Pet. Corp., No. 16 Barnard, Vent. Ave., V.	28- 3-23	8,452	will redrill
Cal. Alliance Pet. No. 1 Hartman, Vent. Ave., Ven.	22- 3-23	7,477	cleaning out
Brit. Amer. Pet., No. 9 Hartman, Vent. Ave., Vent.	21- 3-23	2,094	sd. sh. drlg.
Lloyd Corp., No. 3 Dabney, Ventura Ave., Ventura	23- 3-23	9,820	O.S. drlg.
Lloyd Corp., No. 4 Dabney, Ventura Ave., Ventura	23- 3-23	9,560	sd. sh. drlg.
Belridge Oil, No. 1-27, North Belridge, Kern	1-28-20	8,125	sd. sh. drlg.
Belridge Oil, No. 28-15, North Belridge Kern	28-27-20	8,370	sd. sh. drlg.
Tide Water A. O., No. 24, North Belridge, Kern	21-27-20	8,566	flow 1,910 b.d.
Abbott, F. E., No. 1 Gamble, Blackwell's Cor., K.	7-27-20	780	sd. sh. drlg.
Texas, No. 1 Beer, Devil's Den, Kern	6-26-19	3,060	sd. sh. drlg.
O'Reily, Frances, No. 2 Seale Edison, Kern	5-30-29	4,103	bailing
McDonald & Dearin, No. 3 Kernco, Kernt Front, K.	10-28-27	1,384	sd. sh. drlg.
D. & D. Oil, No. 6 Kern, Kern River, Kern	34-28-28	570	sd. sh. drlg.
D. & D. Oil, No. 8 Kern, Kern River, Kern	34-28-28	506	O.S. drlg.
D. & D. Oil, No. 10 Kern, Kern River, Kern	34-28-28	391	sd. sh. drlg.
D. & D. Oil No. 12 Kern, Kern River, Kern	34-28-28	418	sd. sh. drlg.
Sleeper Ridge Oil, No. 1 Kern, Kern River, Kern	15-29-28	1,480	dry; abd.
Helm & Smith, No. 15 Kern, Kern River, Kern	34-28-28	560	sd. sh. drlg.
Hast Oil, No. 6 Kern, Kern River, Kern	34-28-28	542	pump 11 b.d.
D. B. K., No. 11 Kern, Kern River, Kern	34-28-28	451	pump 3 b.d.
Ring Oil, No. 8 Shapiro, Mount Poso Kern	32-26-28	1,710	tested wet
Ring Oil, No. 29-10 Bowles, Mount Poso, Kern	29-26-28	1,802	pump 320 b.d.
Ring Oil, No. 4 Blackfoot, Mount Poso, Kern	32-26-28	1,926	dry; abd.
Vedder Pet., No. 21-1 Lambert, Mount Poso, Kern	21-26-27	1,527	O.S. drlg.
Hill and Associates, No. 1-A Hill, Mount Poso, Kern	35-26-28	846	sd. sh. drlg.
Hogan Pet. No. 1 Wible, Mountain View, Kern	23-30-29	5,598	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
B. ck., bottom choke.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits.
Cd. or Crd., cored.
C.D., correct depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg., or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.S.T., drill-stem test.
D.P., drill pipe.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Recvd., recovered.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtrkd. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas, and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T. ck., top choke.
T.P., tubing pressure.
Tr., tract.
Tstd., tested.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.O.O., waiting on orders.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Allied Pet., No. 33 Allied, Mountain View, Kern	19-30-29	4,496	sd. sh. drlg.
Texas, No. 2 Jewett, Arvin, Kern	16-31-29	6,482	rig to pmp.
Richfield Oil Corp., No. 2 Mott, Arvin, Kern	9-31-29	6,155	O.S. drlg.
Morton, L. C., No. 1 Barlow Farms, Arvin, Kern	25-31-29	5,699	gr. sd. drlg.
Western Gulf Oil, No. 44-B KCL, Fruitvale, Kern	22-29-27	3,857	sd. sh. drlg.
Western Gulf Oil, No. 12 Red Ribbon, Fruitvale, K.	27-29-27	3,262	sd. sh. drlg.
Meridian Pet. Corp., No. 2 Deep Test, Fruitvale, K.	23-29-27	3,742	tested wet
Richfield Oil Corp., No. 1, KCL, Fruitvale, Kern	29-29-27	2,763	sd. sh. drlg.
Union Oil, No. 4-23 Bowerbank, Goose Lake, Kern	25-29-24	10,270	cleaning out
Trico Oil & Gas No. 1 Tulare, Delano gas field, K.	27-24-23	136	sd. sh. drlg.
Standard Oil, No. 3 Mushrush, Wasco, Kern	7-27-24	1,072	sd. sh. drlg.
Union Oil, No. 41-34, KCL, Rio Bravo, Kern	34-28-25	10,998	sd. sh. drlg.
Superior Oil, No. 1 Smith, Rio Bravo, Kern	34-28-25	8,995	sd. sh. drlg.
Superior Oil, No. 1 Weber, Rio Bravo, Kern	27-28-25	10,952	sd. sh. drlg.
Standard Oil, No. 1 Ross Greeley, Kern	20-29-26	10,677	sd. sh. drlg.
Standard Oil, No. 11-20, KCL, Greeley, Kern	18-29-26	10,187	sd. sh. drlg.
Standard Oil, No. 11-21, KCL, Greeley, Kern	18-29-26	9,341	sd. sh. drlg.
Standard Oil, No. 12-5, KCL, NW Greeley, Kern	7-29-26	10,480	gr. sd. drlg.
General Pet. Corp., No. 1 Sullivan NE Greeley, K	12-29-25	11,386	O.S. drlg.
Continental Oil, No. 2-D, KCL, Bellevue, Kern	14-30-26	14,051	P.B. 11,802
Shell Oil, No. 21-28-B, KCL, Ten Section, Kern	28-30-26	7,784	sd. sh. drlg.
Tide Water A. O., No. 46-7-E, KCL, Strand, Kern	7-30-26	8,372	flow 2,013 b.d.
Shell Oil, No. 75-12-B KCL, Strand, Kern	12-30-25	8,320	completing
Ohio Oil, No. 15-E, KCL, Canal, Kern	14-30-25	8,237	O.S. drlg.
Shell Oil, No. 6-14-A, KCL, Canal, Kern	14-30-25	7,994	sd. sh. drlg.
Richfield Oil Corp., No. 12-33-A, KCL, Tupman, K.	33-30-25	9,331	redrlg. 8,580
Richfield Oil Corp., No. 41-32-A KCL, Tupman, K.	32-30-25	6,584	sd. sh. drlg.
Richfield Oil Corp., No. 67-4-B, KCL, Cole's Lv., K.	4-31-25	9,384	O.S. drlg.
Richfield Oil Corp., No. 76-4-B, KCL, Cole's Lv., K.	4-31-25	8,741	sd. sh. drlg.
Standard Oil, No. 20-2, KCL, Cole's Levee, Kern	9-31-25	8,660	redrlg. 8,330
Standard Oil, No. 20-3 KCL, Cole's Levee, Kern	9-31-25	8,753	sd. sh. drlg.
Standard Oil, No. 20-4, KCL, Cole's Levee, Kern	9-31-25	9,302	sd. sh. drlg.
Ohio Oil, No. 4-F, KCL, Cole's Levee, Kern	11-31-25	9,720	sd. sh. drlg.
Ohio Oil, No. 5-F, KCL, Cole's Levee, Kern	10-31-25	9,271	O.S. drlg.
Tide Water A. O., No. 81 KCL, Cole's Levee, Kern	14-31-25	10,480	sd. sh. drlg.
Union Oil, No. 58-11, KCL, Cole's Levee, Kern	11-31-25	10,008	flow 660 b.d.
Baker & Sonne, No. 1 Leyse, Midway-Sunset, Kern	20-32-23	2,730	will abd.
Quality Oil, No. 6 W.P., Midway-Sunset, Kern	27-32-23	1,975	pmp. O. & W.
Merritt-Annex Oil, No. 8 Fried, Midway-Sunset, K.	25-12-24	2,494	pmp. S.W.
General Pet. Corp. No. B.V.A., Midway-Sunset, K.	1-32-24	10,280	hd. sh. drlg.
Signal O. & G., No. 6 Kendon, Midway-Sunset, K.	35-32-23	1,382	sd. sh. drlg.
Shell Oil, No. 45-9 B.V.A., Midway-Sunset, Kern	9-32-25	9,660	sd. sh. drlg.
National Oil, No. 34 Sunset, Midway-Sunset, Kern	35-32-23	1,253	sd. sh. drlg.
Oxford Oil, No. 6 Sunset, Midway-Sunset, Kern	27-31-22	1,630	sd. sh. drlg.
Ohio Oil, No. 43-3-B, KCL Paloma, Kern	3-32-26	6,060	sd. sh. drlg.
Western Gulf Oil, No. 74-3-A, KCL, Paloma, Kern	3-32-26	6,652	sd. sh. drlg.
Richfield Oil Corp., No. 81-36-B.V.A., B.V.L., Kern	36-31-25	9,350	sd. sh. drlg.
Shell Oil, No. 37-25-A, Pleito, Wheeler Ridge, Kern	25-11-21	1,994	sd. sh. drlg.
Continental Oil, No. 1-F KCL, San Emidio, Kern	5-10-21	9,221	gr. sd. drlg.
Shell Oil, No. 52-2-13-A, KCL, San Emidio, Kern	13-11-22	11,702	hd. sh. drlg.
Deal, O. T., No. 1 Rankin, McKittrick, Kern	30-30-22	103	sd. sh. drlg.
Par Pet., No. 1 Line, Antelope Valley, Kern	32-25-17	3,032	sd. sh. drlg.
Standard Oil, No. 51-19-B fee, NE Coalinga, Fresno	19-19-16	6,383	sd. sh. drlg.
Union Oil, No. 57-18 Cook, NE Coalinga, Fresno	18-19-16	6,978	sd. sh. drlg.
Amerada Pet. Corp., No. 3-17 S.P.L., NE Coal., Fr.	17-19-16	6,795	sd. sh. drlg.
Superior Oil, No. 1 Husong, NE Coalinga, Fresno	18-19-16	7,193	sd. sh. drlg.
Wilshire Annex Oil, No. 64-30-B, C Coalinga, Fres.	30-19-16	8,383	O.S. drlg.
Lytle, R. S., Agent, No. 53-7-F, SE Coalinga, Fresno	7-20-16	6,451	sd. sh. drlg.
Lytle, R. S., Agent, No. 64-7-F, SE Coalinga, Fresno	7-20-16	7,422	sd. sh. drlg.
Lytle, R. S., Agent., No. 26-18-F, SE Coalinga, Fres.	18-20-16	2,283	sd. sh. drlg.
Universal Cons'd. Oil, No. 81-24-C, SE Coal., Fresno	24-20-15	5,581	sd. sh. drlg.
Texas, No. 3 Exeter fee, SE Coalinga, Fresno	6-20-16	7,896	O.S. drlg.
Texas, No. 1 Anderson, SE Coalinga, Fresno	6-20-16	3,655	sd. sh. drlg.
Standard Oil, No. 62-13-C fee, SE Coalinga, Fresno	13-20-15	6,785	sd. sh. drlg.
Standard Oil, No. 75-13-C fee, SE Coalinga, Fresno	13-20-15	5,976	sd. sh. drlg.
Standard Oil, No. 31-19-F fee, SE Coalinga, Fresno	19-20-16	3,984	sd. sh. drlg.
Superior Oil, No. 5 fee, SE Coalinga, Fresno	7-20-16	8,249	flow 3,290 b.d.
Superior Oil, No. 4 Huffman, Kettleman N, Fresno	29-21-17	9,373	sd. sh. drlg.
K. N. D. A., No. 25-22-Q, Kettleman North, Kings	22-22-18	7,880	O.S. drlg.
K. N. D. A., No. 38-22-Q, Kettleman North, Kings	22-22-18	6,530	br. sh. drlg.
K. N. D. A., No. 56-22-Q, Kettleman North, Kings	22-22-18	6,082	br. sh. drlg.
K. N. D. A., No. 36-26-Q, Kettleman North, Kings	26-22-18	4,987	sd. sh. drlg.
K. N. D. A., No. 47-26-Q, Kettleman North, Kings	26-22-18	6,591	sd. sh. drlg.
K. N. D. A., No. 41-28-Q, Kettleman North, Kings	28-22-18	7,298	br. sh. drlg.
Standard Oil, No. 2-19-J, Kettleman North, Fresno	19-21-17	10,950	flow 335 b.d.
Standard Oil, No. 27-19-J, Kettleman North, Fresno	19-21-17	9,690	gr. sh. drlg.
Standard Oil, No. 72-19-J, Kettleman North, Fresno	19-21-17	9,898	sd. sh. drlg.
Standard Oil, No. 27-7-Q, Kettleman North, Kings	7-22-18	9,240	sd. sh. drlg.
Standard Oil, No. 43-7-Q, Kettleman North, Kings	7-22-18	8,568	cleaning out
Standard Oil, No. 54-7-Q, Kettleman North, Kings	7-22-18	5,793	sd. sh. drlg.
Standard Oil, No. 63-7-Q, Kettleman North, Kings	7-22-18	6,060	sd. sh. drlg.
Standard Oil, No. 32-17-Q, Kettleman North, Kings	17-22-18	6,034	sd. sh. drlg.
Standard Oil No. 72-17-Q, Kettleman North, Kings	17-22-18	6,074	sd. sh. drlg.
Standard Oil, No. 76-17-Q, Ketleman North, Kings	17-22-18	2,153	sd. sh. drlg.
Standard Oil No. 83-17-Q, Kettleman North, Kings	17-22-18	4,429	sd. sh. drlg.
Standard Oil, No. 52-21-Q, Kettleman North, Kings	21-22-18	5,466	sd. sh. drlg.
Standard Oil, No. 74-21-Q, Kettleman North, Kings	21-22-18	5,195	sd. sh. drlg.
Standard Oil, No. 85-21-Q, Kettleman North, Kings	21-22-18	8,035	O.S. drlg.
Standard Oil, No. 32-27-Q, Kettleman North, Kings	27-22-18	6,660	cleaning out
Comass Oil, No. 1 Points, Deer Creek, Tulare	8-23-26	2,460	sd. sh. drlg.
Priest Valley Pet., No. 1 Greve, Priest V., Monterey	22-20-12	1,150	idle
Buttes Oilfields, Inc., No. 6 Marysville, Sutter	1-15- 1	4,380	sd. sh. drlg.
Seaboard Oil, No. 1 Howard, Bear Creek, Merced	6- 8-11	3,990	sd. sh. drlg.
Cons'd. Pet., No. 1 Ashurst, Los Pinos, San Benito	11-17-11	1,384	sd. sh. drlg.
Texas, No. 1 Welch, Rio Vista gas field, Sacramen.	5- 3- 3	1,776	sd. sh. drlg.

OKLAHOMA

Week Ending November 4

NORTHERN OKLAHOMA

Caddo County

Sinclair Prairie Oil Co. No. 1 Gorman, SW NW NW Sec. 1-16-13w. S. heavy oil; cd. 6,442-49 ft.: Wdfrd. 6,600 ft.; Hntn. 7,157 ft.; drlg. 7,265 ft.

Canadian County

W. R. Ramsey's No. 1 Mansfield, C NW NE Sec. 16-14-9w. Lytn. 6,250-80 ft., N.S.; drlg. 8,311 ft.

Cleveland County

Nels Burton No. 1 Boggs, NE NE SE Sec. 16-9-2w. 2nd Wlx. 7,585 ft.; T.D. 7,646 ft.; P.B. 7,473 ft.; shot and acd.; swbd. 47 B.O. and 50 B.W. in 16 hrs.

Nels-Burrton No. 1 Hirsch, NW NW NE Sec. 17-9-2w. O.W.P.B.; O.T.D. 7,692 ft.; T.D. 7,695 ft.; swbd. 250 B.F. in 24 hrs.; 10% B.S.

Sinclair-Prairie No. 1 Ward, SE SE SE Sec. 30-7-1. Hntn. 6,185 ft.; Vla. 6,408 ft.; open 30 min. at 6,800 ft., rec. 8 W.; P.B. to 6,782 ft.; swb. 106 B.O. in 24 hrs.; hvy. blk. oil; drlg. 7,240 ft.

Comanche County

Mid Night Oil No. 1 Howe, NW NW NE Sec. 30-2-13w. O.W.D.D.; O.T.D. 703 ft.; drlg. 995 ft.

Creek County

Sunray Oil Co. No. 1 Harris, SW SW NE Sec. 30-14-7. T.D. 2,927 ft.; est. 370,000 cu. ft. gas.

Garvin County

Duckworth & Jennings' No. 1 Bowie, NW NE SE Sec. 3-4-3. W.O.C. 60 ft.

Robinson & Midco's No. 1 Clay, SW SW NW Sec. 21-4-3. Simp. dense 3,145 ft.; cd. 3,277-94 ft.; rec. 13 ft. sdy. dolo.; T.D. 3,440 ft.; S.D.O.

Grady County

Alma Oil Co.'s No. 5 Pettit (O.W.D.D., SE SE ES Sec. 11-4-8w. T.D. 3,660 ft.; perf. and tstg.; est. 50 B.O.P.D.

Sinclair Prairie's No. 4 Charleston, NE NE SE Sec. 27-5-8w (O.W.D.D.): gas 3,330-50 ft.; sd. 3,918-25 ft.; T.D. 3,-967 ft.; ga. 43,600,000 cu. ft. gas.

Grant County

Magnolia Pet. Co.'s No. 1 Margay-Johnson, SW SW NE Sec. 29-25-8w. Fsg. 6,059 ft.

Greer County

Butler's No. 1-A Meyers, NE SE NW Sec. 25-7-21w. T.D. 1,236 ft.; S.D.O.

Jackson County

English Drlg. Co.'s No. 1-A Aetna Life SE SE NE Sec. 26-3-20w. Drlg. 375 ft.

Bob Helton et al's No. 1 Lee, NE SE NW Sec. 36-2-19w. Drlg. 1,280 ft.

Jefferson County

H. M. Weir No. 1 Carmichael, NE NE SW Sec. 23-7s-7w. Drlg. 3,525 ft.

Kingfisher County

Anderson-Prichard No. 1 Geis, C NE SW Sec. 15-18-9w. Lytn. 6,450-6,510 ft.; drlg. 8,497 ft.

Ace Gutowsky No. 1 Lankford, NE NE SE Sec. 34-17-6w. Miss. 7,014 ft.; Woodford 7,531 ft.; Msnr. 7,562 ft.; Wlx. 8,-105 ft.; 2nd Wlx. 8,275 ft.; T.D. 8,330 ft.; S.D.O.

Kiowa County

Bollen-Dillard & Roberts No. 1 Holcomb NE NE SW Sec. 25-7-19w. Drlg. 1,470 ft.

Frank Dillard et al's No. 1 Hobbs, SE SE NW Sec. 35-6-17w. Gr. wsh. 555 ft.; drlg. 593 ft.

Hagerling et al No. 1 Bozeman, SE SE NE Sec. 14-5-18w. Drlg. 1,286 ft.

C. J. Hagerling No. 1 Kimray, SW SW NW Sec. 36-5-18w. T.D. 1,592 ft.; S.D.

Lincoln County

Black Gold No. 1 Locquchment, NE NE NE Sec. 28-14-6. T.D. 3,175 ft.; est. 5 B.O.P.D.; S.D.

R. L. Kemp's No. 1-A Burke, NE SW NE Sec. 20-17-6. Prue 2,864-2,908 ft., T.D.; est. 25 B.O.P.D. and 2,960,000 cu. ft. gas.

Summitt Drlg. Co.'s No. 1 Percival, SE SE SE Sec. 24-12-3. Drlg. 5,190 ft.

Noble County

Franks & Ellis' No. 1 Stranka, SW SW NW Sec. 35-24-1w. H.F.W.; drlg. 1,275 ft.; (cor.).

Oklahoma County

Hall & Briscoe No. 1 Thompson, SW SW NE Sec. 28-13-1. S.O. 4,803-27 ft.; T.D. 6,058 ft.; P.B. 5,185 ft.; C.O. to 4,850 ft.; p. 140 B.O. in 24 hrs.

Osage County

Midco Oil Co.'s No. 1 Osage, NE NE SW Sec. 17-22-8. S.D. 2,847 ft.

Pawnee County

Ed Kelly No. 1 Hill, SW SW SE Sec. 1-21-5. T.D. 3,370 ft.; H.F.W.; D.&A.

Payne County

Helmerich & Payne's No. 1 Berry, Sec. 14-17-6. Drlg. 2,665 ft.

C. R. Hoagland No. 1 Stanolind, SE SE SW Sec. 27-18-4. Miss. 3,800 ft.; T.D 3,905 ft.; D.P. stk.

C. F. Newsom's No. 1 Jones, NE NE SW Sec. 15-18-3. Miss. 4,019 ft.; T.D. 4,254 ft.; D.&A.

Pottawatomie County

Neustadt et al No. 1 Howeth, NE SE NE Sec. 14-6-4. Sd. and S.S.O. 3,455-60 ft.; S.D. 5,060 ft.

Sequoyah County

Thompson Bros. No. 1 Ruby, NW NW NE Sec. 30-12-22. Hntn. 1,451 ft.; T.D. 1,912 ft. (cor.); S.D.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. T.D. 14,540 ft.; C.O.

SOUTHERN OKLAHOMA

Choctaw County

Letchfield & Kirksly No. 1 Schuester SW SE SW Sec. 13-6s-14. Cd. 1,160-81 ft., L.&sd.; W.O.C. 1,146 ft.

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. T.D. 1,662 ft.; S.D.

Cotton County

Scarborough et al's No. 1 Ash, NE NE SE Sec. 7-4-10w. Drlg. 264 ft.

Jefferson County

Fred Land et al's No. 1 Barrett, NE SE SE Sec. 14-6s-6w. Sd. 1,852 ft., S.O.; D. P. stk. at 1,100 ft.; T.D. 1,890 ft.

Love County

Neff et al's No. 1 Brahma, NW NW SW Sec. 35-6s-2e. S.S.O. 1,555-90 ft.; T.D. 3,012 ft. in Vla.; abd.

Marshall County

Hughes et al No. 1 Vittitto, C NE SE Sec. 11-5s-4e. O.W.D.D.; O.T.D. 7,100 ft.; T.D. 7,110 ft.; S.D.

Johnson et al No. 1 Godfrey, SW SE NE Sec. 14-6s-6e. Vla. 2,627 ft; S.S.O.; drlg. 3,123 ft.

Tillman County

Magnolia Pet. Co.'s No. 1 Amyx, NW SE SE Sec. 17-3-16w. Drlg. 1,842 ft.

KANSAS

Week Ending November 4 (Descriptions are East unless marked otherwise)

Barton County

C. E. Ash et al's No. 1 Montgomery, NW NW NW Sec. 11-16-11w. Drlg. 1,580 ft.

Aylward Prod. et al's No. 1 Harzman, C W½ NW SW Sec. 33-16s-11w. Lans. 3,056 ft.; Arb. 3,350-56 ft., T.D.; S. 19 B.O. and 12 B.W. in 19 hrs.

B. B. & M. Drlg. Co.'s No. 1 Krier, CEL SE SE Sec. 30-16-11w. T.D. 3,127 ft.; 700 ft. O.I.H.; no test.

Crown Pet. Co. No. 1 Marchand, NE SE NW Sec. 13-20-11w. Drlg. 2,910 ft.

Seaney & Clampitt's No. 1 Schauf, CSL E½ SW Sec. 1-16-12w. Lans. 3,051 ft.; S.S.O. and wtr. in core 3,142-56 ft.; Arb. 3,358-91 ft., T.D.; shots 2,880-2,-905 ft.; show W.&S.S.O.; C.O.

Butler County

Allison & Talbott's No. 1 Zink, SE SE NE Sec. 32-29-5. Drlg. 1,440 ft.

Carey & Jennings No. 1 Kelly, C SW Sec. 20-27-4. S.D. 2,660 ft.

Cromwell & Lewis No. 1 Stern, NW NW NW Sec. 27-27-6e. M.I.M.

Marylyn Oil et al No. 1-A Hoard, SW NE NE Sec. 28-29-8. Lans. 1,625 ft.; S.S.O. 2,095 ft.; S.O. 2,355-60 ft.; Miss. 2,836-41 ft.; 200 ft. O.I.H. in 8 hrs.; acd.

C. H. Pechin et al's No. 1 Hartenbower (O.W.D.D.), NW NW NW Sec. 16-29-6. O.T.D. 3,257 ft.; cg. 2,400 ft.; to test Peru sd.

Coffey County

Hollett's No. 1 Butler, SE SW SE Sec. 28-20-15. T.D. 2,202 ft.; S.D.O.

Cowley County

Allred's No. 1 Peninger, C NE NW Sec. 35-32-5. Sd. 623-80 ft., T.D.; D.&A.

Garden's No. 1 Rahn, SW SW NW Sec. 13-34-5. Bart. 2,936 ft.; S. 2 B.O.P.H.; S.D.O.

E. B. Shawyer's No. 1 Henderson, C W½ NE NE Sec. 4-33-6. Drlg. 2,788 ft.

Gerald Smith et al's No. 1-B Haney, CEL NW SW Sec. 9-33-6. R.U.S.T. 3,495 ft.; Arb. 3,517-21 ft., T.D.; S.S.O. and H. F.W.; D.&A.

Dickinson County

Franks et al No. 1 Huffman, NW NW SW Sec. 11-13-1. Hntn. 2,807 ft.; Vla. 3,048-55 ft.; S.S.O. 3,156-65 ft.; base Vla. 3,218 ft.; H.F.W. 3,240 ft.; inc. wtr. 3,256 ft.; S.D.O. 3,266 ft.; D.&A.

Douglas County

Greenway Oil Co.'s No. 1 Grosdedier, C E½ SE NE Sec. 24-13-20. S.D. 520 ft.

Franklin County

Security O. & G. Co. No. 1 Teall, C SW NW Sec. 11-17-17. Drlg. 1,100 ft.

Greenwood County

Chas. Barker's No. 1 Gregg, SW NW SE Sec. 35-25-12. (O.W.D.D.). O.T.D. 1,-660 ft.; drlg. 1,955 ft.

A. A. Hinze et al's No. 1 Hester, NW SW NE Sec. 1-22-12. S.D. 510 ft.

Marylyn Oil Co.'s No. 1 Burke, NE NE SW Sec. 27-24-11. R.U. mch.

Jefferson County

E. W. Mosbacker et al's No. 1 McLaughlin, SW NE NW Sec. 4-10-20. S.D. 920 ft.

C. L. Sheedy et al's No. 1 O'Neill, SE SW NW Sec. 34-8-19. Arb. 2,842 ft., N.S.; S.D.O.

Kingman County

Skelly Oil Co. No. 1 Miller, CSL N½ NE Sec. 31-27-10w. Set 7-in. 4,067 ft.; R.U. S.T.

McPherson County

Westgate-Greenland's No. 1 McCulle, CEL NE SW Sec. 29-17-1w. Drlg. 1,-785 ft.

Marion County

Polhamus et al's No. 1 Noone, C SW NE Sec. 18-18-3. Rig.

Montgomery County

Larke & Whortan No. 1 Clemmer, C SW SW Sec. 21-32-15. Arb. 1,530 ft.; set 5-in. csg.; W.O.C.

Osage County

J. M. Edwards No. 1 Detrick (O.W.D.D.), C NW SE Sec. 21-14-15. O.T.D. 1,200 ft.; S.G. in sh. 1,618-24 ft.; S.D. 1,650 ft.

Pratt County

Shelly Oil Co. No. 1 Royse, C SW Sec. 9-28-11w. Lans. 3,604 ft.; Vla. 4,246-49 ft.; T.D. 4,268 ft.; S.S.O.; 802,000 cu. ft. gas.

Rice County

H. B. Garden et al's No. 1 Misener, C N½ NW NE Sec. 21-21-7w. R.R.

Fred Jones et al No. 1 Benhke, NW SW NW Sec. 25-18-10w. Congl. 3,181 ft.; quartzite 3,209-14 ft., T.D.; H.F.O.

Phoenix Drlg. No. 1 Linville, SW SW SE Sec. 4-20-10w. Simp. 3,375 ft.; Arb. 3,388 ft.; acd. and P. 30 B.O.P.D.

Saco Oil's No. 1 Habeger, SE SE SW Sec. 12-18-10w. T.D. 1,810 ft.; rng. 10-in.

Vickers Pet. Co. No. 1-A Rodenberg, CNL NW¼ Sec. 8-18-10w. Lans. 2,930 ft.; Arb. 3,265-81 ft., T.D. N.S.

Rooks County

Broadview Oil No. 1 Baxter, NE SW SW Sec. 35-8-16w. Lans. 3,180 ft.; S.S.O.; T.D. 3,263 ft.; P. 89 B.O. in 7 hrs.; pot. 269 B.O.P.D.

Russell County

Ray Shaffer et al's No. 1 Shaffer, NE NE SW Sec. 9-13-11w. Drlg. 928 ft.

Stafford County

Continental Oil Co. No. 1 Killer, SE SE SE Sec. 15-24-13w. S.O. 3,733-43 ft., cd. 4,111-16 ft. and rec. 5 ft. sat.; T.D 4,116 ft.; 3,900 ft. O.I.H.

Woodson County

Billerman et al's No. 1 Rauscher, CSL NW SE Sec. 19-23 15. Dry sd. 1,460-**Bird, Hanley & Sheedy No. 1 Pingrey, C S½ SE Sec. 22-25-15. Spd.**

MISSOURI

Adair County

Ward McGinnis' No. 1 Laughlin, SE SE SW Sec. 16-53-34w. Drlg. 300 ft.

Andrew County

Davis Bros. et al No. 1 Gee, NW NW SE Sec. 28-60n-35w. S.O. in Bart. 998 ft.; S.O. 2,065-75 ft.; Vla. 2,381 ft.; Arb. 2,665 ft.; T.D. 2,750 ft.; D.&A.

E. F. Neely et al's No. 1 Shores, SE SE SE Sec. 12-60-37w. Drlg. 1,335 ft.

Clinton County

C. E. King et al's No. 1 Vanderau, SE NE SW Sec. 18-55-31w. Drlg. 1,480 ft.

NEBRASKA

Cass County

Golden Rod Oil Co. No. 1 Sparer, SE SE SE Sec. 8-11-13e. S.D. 1,200 ft.

Fillmore County

Dan Kornfeld's No. 1 Mathis, NE NE NE Sec. 22-5-1w. C.O. 400 ft.

Keith County

California-Nebraska Oil, Ltd.'s No. 1 Guststuehm, NW NW NW Sec. 21-14-37w. Dak. 2,772 ft.; S.O. 2,895-2,901 ft.; drlg. 2,998 ft.

Richardson County

Pawnee Royalty's No. 1 Boice, CSL N½ NE NE Sec. 18-1-16e. Miss. 2,400 ft.; C.O.

ARKANSAS

Clark County

Coker Oil Corp.'s No. 1 H. C. and H. H. Cabe, 330 ft. NE cor. NW NE Sec. 3-10-21. Set 5½-in. csg. 244 ft.; reported S.O. 352 ft.; set 4-in. csg. 364 ft.; swbd. fr. wtr.; no S.O.; S.D. 415 ft.

W. S. King's No. 1 H. Ross, 640 ft. S, 350 ft. W, NE cor. S½ SW Sec. 3-10-21. S.D. 1,670 ft.

W. P. Wilson's No. 1 Hamilton & Mathews, C W½ NE NE Sec. 31-10s-20w. Run 10-in. csg. 41 ft.; T. Nac. 358 ft.; S.S.O.; reported S.O.&G. 437 ft.; drlg. sdy. sh. 1,278 ft.

Columbia County

Ark. Fuel Oil Co.'s No. 1-A King, C SE SW Sec. 16-17-20. T. por. L. 7,651 ft.; set 6-in. csg. 7,693 ft.; T.D. 7,697 ft.; drlg. plug.

Ark. Fuel Oil Co.'s No. 1-B King, 1,980 ft. S and E, NW cor. Sec. 21-17-20. Set 9⅝-in. csg. 2,128 ft. (cor.); drlg. 3,300 ft.

Atlantic Ref. Co.'s No. 1-B Pine Woods Lbr. Co., C SE NW Sec. 16-18-22. Drlg. sh. 3,319 ft.

Hunt Oil Co.'s No. 1 McWilliams, C NW NW Sec. 15-18-19. Spd.

Lion Oil Ref. Co.'s No. 1 Warnock est., C NW NW Sec. 15-18-22. Drlg. sh. 5,-375 ft.

J. K. Mahoney's No. 1 E. Riley, C NW NE Sec. 14-18-19. Drlg. sh. 807 ft.

Normandie Oil Co.'s No. 2 Dees, C SE SE Sec. 24-17-20. Set whpstk. 5,300 ft.; O.T.D. 5,738 ft.; P.B. 4,500 ft.; drld. out and set whpstk. 4,636 ft.; set whpstk. 4,678 ft.; drlg. sh.&L. 7,236 ft.

Shell Oil Co., Inc.'s No. 1 Keith, C SE SE Sec. 9-18-22. R.U.

Shell Oil Co., Inc.'s No. 2 Merritt, C NW SW Sec. 15-17-20. Drlg. sh. 6,847 ft.

Southwood Oil Co.'s No. 1-C A. L. Poindexter, C N½ SW SE Sec. 23-17-20. Whpstkd. 4,758 ft.; fsg. 7,657 ft.

Standard Oil Co. of La.'s No. 1-B Gunnels, 571 ft. W, 585 ft. S, NE cor. NW SW Sec. 19-17-19. Drlg. sd. and sh. 7,291 ft.

Standard Oil Co. of La.'s No. 1-B N. Johnson, 655 ft. W, 660 ft. N, SE cor. SE SE Sec. 9-16-22. R.U.

Standard Oil Co. of La.'s No. 1-B Lewis, 660 ft. N, 560 ft. E, SW cor. SW NE Sec. 19-17-19. Drlg. sd.&sh. 3,750 ft.

Standard Oil Co. of La.'s No. 1-A Longino Unit, C NE SW Sec. 19-17-19. Set 9⅝-in. csg. 2,149 ft.; drlg. sh. 3,-612 ft.

Standard Oil Co. of La.'s No. 1 Oda Jameson et al, 660 ft. N, 664 ft. W, SE cor. Sec. 14-17-19. Drlg. sd.&sh. 6,-035 ft.

Standard Oil Co. of La.'s No. 1 Petty Stave, C SE SE Sec. 4-17-21. Drlg. sd., sh.&shls. 5,085 ft.

Standard Oil Co. of La.'s No. 1 R. S. Warnock, C NW NW Sec. 36-16-20. Drlg. sh.&stks. L. 4,952 ft.

Superior Oil Co.'s No. 1 Martel, C SW SW Sec. 10-18-22. M.I.M.

Tide Water Seaboard's No. 1 Clark, C SE NE Sec. 16-18-19. Set 10¾-in. csg. 2,-514 ft.; drlg. sd.&sh. 6,687 ft.

G. H. Vaughn and Deep Rock Oil Corp.'s No. 1 J. Jones unit, C SW NE Sec. 21-17-20. Set whpstk. 3,640 ft.; drld. to 4,678 ft.; hole 4° off; abd. loc. and skd. rig to C SW NE and drlg. sh.& sd. 7,450 ft.

Craighead County

Tennark, Inc., No. 1 R. M. Martin, SE cor. NE NE Sec. 35-14-3e. Drlg. sdy. L. 3,-462 ft.; T. sdy. L. 3,458 ft.; reported S.O. 3,924 ft.; S.D. 3,950 ft.

Lafayette County

East Texas Ref. Co.'s No. 2-A Patton, 373 ft. S, 652 ft. E, NW cor. NW SE Sec. 24-16-24. Jnkd. and abd. hole 3,-524 ft.; skd. 100 ft. S and spd.; drlg sh. 3,215 ft.

Standard Oil Co. of La.'s No. 2 H. B. Eddy et al, C SE SE Sec. 12-16-23. Set 6-in. csg. 7,262 ft.; T.D. 7,287 ft.; W.O.C.; sat. L. 7,274-87 ft.

Lonoke County

Cabot Drlg. Club's No. 1 LeMay, 330 ft. SE cor. SE SW Sec. 26-4n-9w. S.D. 20 ft.

Nevada County

O. T. Clark's No. 1 T. M. Bemis, 330 ft. NW cor. NW NE Sec. 23-10s-22. M. I.M.

Ouachita County

A. B. Turner et al No. 1 Cook Est., C NW SW Sec. 27-15-18. Rng. 7-in. csg.; T.D. 1,618 ft.

Pulaski County

Coker Oil Corp.'s No. 1 Huffman, 330 ft. NW cor. NW SW SW Sec. 29-4n-11w. 8¾-in. csg. 206 ft.; S.D. 1,763 ft.

Sevier County

R. A. McArthur's No. 1 Bell est., 20 ft. SE cor. SW SW Sec. 29-9s-32w. Set 12½-in. csg. 100 ft.; S.D. 390 ft.

Union County—Schuler

Lion Oil Ref. Co.'s No. 7-B Morgan, 330 ft. NW cor. W½ SE Sec. 18-18-17. T. Jones sd. 7,546 ft.; drlg. sd. 7,550 ft.

Union County—Other

Barnsdall Oil Co.'s No. 1 Cameron, C SW SW Sec. 36-19-17. Drk.

E. G. Bradham's No. 4-A H. C. McKinney, 306 ft. N, 660 ft. E, SW cor. SW SW Sec. 30-17-15. Hole 120° off; P.B. 2,150 ft.; hole 11° off; abd. and skd. 20 ft. N; set 10-in. csg. 100 ft.; T.D. 2,167 ft.; set 7-in. csg. 2,167 ft.; W.O.C.

Crestrock Oil Co.'s No. 1 E. Riley, 330 ft. S, 250 ft. W, NE cor. NW SW Sec. 9-16-15. S.O. 2,370-80 ft. and 2,-390-2,400 ft.; 6-in. csg. 2,415 ft.; T.D 2,415 ft.; perf. 2,370-74 ft.; pmpd. est. 200 B.P.D.; small S.O.; pmpd. 300 B.F. in 8 hrs., 8% oil; W.O.

Delta Drlg. Co. et al's No. 1 J. E. Bull, 330 ft. SE cor. SW NW Sec. 6-18-13. Tstd. oil and S.W. in Meakin sd. and oil and mud in Graves sd.; tstg. sat. sd. in Blsm.; tstd. S.W. 2,710-18 ft., set 7-in. csg. 2,730 ft.; arng. perf.

Delta Drlg. Co.'s No. 1 C. T. Grace, C SE SE Sec. 31-12-14. Set 10¾-in. csg. 815 ft.; T. Sur. L. 6,701 ft.; T. por. 6,-708 ft.; S.W. 6,712 ft.; tstd. - mud, S.W.&S.O. 6,701-27 ft.; S.D.; W.O.

Lion Oil Ref. Co. No. 9-A Hays, Sec. 4 16-15. O.W.W.O.; O.T.D. 7,255 ft.; P.B 2,325 ft.; rpd. csg. 2,276-80 ft.; S.O. pmpd. est. 700 B.P.D. S.W.; S.S.O.; arng. recmt. 2,325 ft.; W.O.C.

Oil Prod., Inc.'s No. 1 Moore, C SE SE Sec. 1-17s-14w. S.D. 3,018 ft.

ALABAMA

Barbour County

W. B. Hinton's No. 1 fee, Sec. 14-9n-26e. Cg. sd. 5,340 ft.

Choctaw County

Joe Modisett et al's No. 1 McCorvey, SE cor., SW SW Sec. 20-9n-2w. S.D. 7,-520 ft.

Houston County

Columbia Oil Co.'s No. 1 State Ld., SE cor. NE NE Sec. 8-2n-29e. S.D. 2,150 ft.; Selma clk.

Lawrence County

Mid-Southern Pet. Co.'s No. 1 W. R. Jackson, 150 ft. NL, 500 ft. EL, Sec. 30-7-6. S.D. 570 ft., hd. L.

Washington County

Texon Drlg. Co.'s No. 1 Stallworth Naval Stores, Sec. 25-5n-4w. Spd.; set 12-in. csg. 147 ft.; cg. clk. 4,912 ft.; T. clk. 5,130 ft.

MISSISSIPPI

Attala County

Kosciusko Oil Co.'s No. 1 Jones, 600 ft. NW cor., Sec. 5-15n-9e. Loc.

P. & M. Oil Co.'s No. 1 J. A. McMillin, 300 ft. SW cor., SE SE Sec. 26-13n-5e. Loc.

Claiborne County

Claiborne Co. Dev. Co. No. 1 Ruth Hayden, S½ SE Sec. 55-11n-2e. O.W.WO., O.T.D. 2,949 ft.; S.D. 3,272 ft., sh.

Copiah County

Triangle Drlg. Co.'s No. 1 W. W Broome, 153 ft. SW cor. SW SE Sec 1-10n-8e. T.D. 10 ft.; spd.; S.D.; W.O. heavy rig.

Harrison County

Big Ridge Oil Co.'s No. 1 Hengin, C NE Sec. 13-7s-10w. S.D. 2,700 ft.

Hinds County

Byrd-Frost et al's No. 1 Gaddis Farms, 275 ft. SE cor. SE SE Sec. 12-6n-3w. R.U.

G. Jefferies' No. 1 Gaddis-McLaurin, 150 ft. E, 274 ft. S, NW cor. SW Sec. 17-7n-2w. Drlg. sh. 4,740 ft.

Itawamba County

G. C. Grasty et al's No. 1 Ky. Lbr. Co., 1,320 ft. E, 660 ft. S, C Sec. 7-10s-10e. Twisted off D.S., skdd. 24 ft. S and spd.; set 10¾-in. csg. 170 ft.; drlg. 377 ft.

Issaquena County

A. A. Chaney, Tr.'s No. 1 J. C. Mohanna, Sec. 13-18n-3e. R.U.

Locke & Mellard's No. 1 W. Gary, 660 ft. SE cor., NW Sec. 14-9n-6w. Loc.

Kemper County

M. R. Crabb et al's No. 1 W. T. Caldwell, NW SE Sec. 25-9n-15w. 10¾-in. csg. 86 ft.; T.D. 1,200 ft.; wash. to bttm.

Lamar County

Ira H. Larr et al's No. 1 M. Simmon, Sec. 32-3n-14w. S.D. 100 ft.

South Miss. Pet. Corp.'s No. 1 Pearly Morris, 500 ft. S, 570 ft. E, C Sec. 4-2n-14w. S.D. 3,029 ft.

Pike County

S. R. Crouch's No. 1 Cupit, 360 ft. N, 660 ft. W, SE cor. NE SW Sec. 25-2n-7e. S.D. 864 ft.

Prentiss County

Home Dev Co.'s No. 1 Mrs. A. Allen, Sec. 8-7s-9e. Drlg. dolo. 1,312 ft.

Simpson County

Cleve Love No. 1 N. E. Gardner, SW cor. SW NE Sec. 1-10n-17w. S.D. 3,150 ft., Wlx.

Wilkinson County

Louisiana Progress Oil Co.'s No. 1 A. M. Young, 792 ft. N, 88° 30' W SE cor., Sec. 40-4n-1e. Drk.

Yazoo County

Jones & O'Brien's No. 2 Stevens, C SE NE Sec. 13-10-3. T.D. 1,545 ft.; ran survey; rng. 10-in. csg. 1,543 ft.; W. O.C.

Union Producing Co.'s No. 1 Friley, 1,944 ft. W, 678 ft. S NE cor., SE Sec. 14-10-3. Set 10¾-in. csg. 1,540 ft.; drlg. 1,880 ft.

Union Prod. Co.'s No. 1 Stevens, C NW NW Sec. 13-10n-3w. T. Cretaceous 4,-395 ft.; rec. 4½ ft. shly. L.&sd. with O.S. 4,407-27 ft.; cd. sdy. sh. 4,670-4,770 ft.; Eutaw O. sd. 4,865-77 ft.; D.S.T. 4,860-77 ft. rec. 2,900 ft. oil 11 min.; ran survey to 5,235 ft.; rmd. out core hole 5,295 ft.; cg. 5,363 ft.

Union Prod. Co.'s No. 2 G. C. Woodruff, 3,220.5 ft. S, 680.7 ft. E, NW cor. SE Sec. 13-10-3. M.I.M.

Yazoo Refinery, Inc.'s No. 1 Frank Brooks, W½ SE NW Sec. 17-10-2w. R.U.

LOUISIANA

N. LOUISIANA WILDCATS

Bossier Parish

Gary & Gibson's No. 1-A Connell, 270 ft. W, 96 ft. S, NE cor. N½ SE SE Sec. 15-19-11. Set 4-in. csg. 368 ft.; W.O.C.

Gulf Ref. Co.'s No. 20 C. B. Hodges, 3,-131 ft. N, 1,388 ft. W, SE cor. Sec. 24-16-12. T. Pett. L. 5,298 ft.; T. Travis Pk. 5,590 ft.; drlg. rd.&gr. sdy. sh. 6,-637 ft.

Oils Finance Corp.'s No. 9 Ark. fee, 200 ft. N, 400 ft. W, SE cor. NE SE Sec. 15-19-11. R.U.

Premier Inv. Co.'s No. 7-B Kendrick, 150 ft. N, 1,980 ft. W, SE cor. Sec. 22-19-11. D.S.T. 1,029-42 ft.; S.O.&G.; S.D.; W.O. 1,775 ft.

Caddo Parish

R. E. Allison's No. 3 Ellerbe et al, 330 ft. N, 1,980 ft. E, SW cor. Sec. 27-18-14. T.D. 5,560 ft.; T. L. 5,547 ft.; set 5½-in. csg. 5,545 ft.; W.O.C.

Ark. La. Gas Co.'s No. 1 Bell, 1,213 ft. N, 1,067 ft. E, SW cor. Sec. 6-17-16. Set 9⅝-in. csg. 3,246 ft.; T. Pettit L. 5,629 ft.; D.S.T. 5,627-77 ft.; rec. 15,-000,000 cu. ft. gas; cg. 6,177 ft.

J. G. Bailey's No. 2-A Muslow, Sec. 17-20-15. O.W.D.D.; O.T.D. 1,571 ft.; cg. 2,206 ft.

Burnham Drlg. Co.'s No. 1 Hurdle, 990 ft. N, 300 ft. E, SW cor. SE¼ Sec. 34-22-16. Set 10-in. csg. 102 ft.; drlg. sh. 2,080 ft.

Burnham Drlg. Co.'s No. 2 Wilkinson, 1,650 ft. N, 990 ft. W, SE cor. Sec. 33-22-16. Set 10-in. csg. 105 ft.

David Crawford et al's No. 1 Lloyd, 3,-940 ft. N, 1,000 ft. E, SW cor. Sec. 29-17-13. T.D. 1,410 ft.; prep. run 9⅝-in. csg.; blew out in Nac. gas sd. at 900 ft. and caught fire; extinguished; built new drk.; drlg. L. 5,-040 ft.

L. I. Davis' No. 1 Williams, C NW NW Sec. 14-15-15. R.U.; S.D.

Jones Oil Co.'s No. 1 Pitts, 250 ft. S, 674 ft. W, NE cor. Sec. 24-20-16. Tstd. dry 1,679 ft., S.O.; acdzd. with 3,000 gal.; W.O.

C. H. Lyons et al's No. 1 Rosenblath, 725 ft. N, 1,270 ft. E. C Sec. 35-18-14. 9-in. csg. 1,221 ft.; set 5½-in. csg. 5,-591 ft.; W.O.C.

P. N. McCullough's No. 4 Hart, 673 ft. N. 620 ft. E, SW cor. Sec. 21-21-16. Set 10-in. csg. 60 ft.; S.D. 350 ft.

D. R. Manziel's No. 1 Brooks, 338 ft. S, 250 ft. E, NW cor. Sec. 17-21-15. Cg. 1,057 ft.

J. F. Mechen's No. 1 Crystal, 990 ft. S, 900 ft. W, NE cor. Sec. 14-21-16. Set 6⅝-in. csg. 1,697 ft.; acd. with 3,000 gal.; tstg.

Milam Prod. Co.'s No. 1 Patrick, 1,985 ft. S, 90 ft. W, NE cor. NW¼ Sec. 1-20-16. Set 8¼-in. csg. 60 ft.; W.O.C.

J. Ray Murray et al's No. 1 Standard Oil Co. fee, 330 ft. N, 200 ft. E, SW cor. Sec. 12-21-16. Set 7-in. csg. 1,500 ft.; acd. with 1,000 gal. at 1,720 ft.; S.O.; T.D. 2,312 ft.; set 5-in. csg. 2,255 ft.; T.D. 2,312 ft.; pmpg. S.W.; S.O.

Claude Nell's No. 1 Vaughn, 115 ft. S, 465 ft. W, NE cor. SW SE Sec. 1-20-16. Set 5½-in. csg. 1,327 ft.; will acd.; T.D. 1,550 ft.

Riggs & Lester's No. 2-A Seybert, 218 ft. N, 4,242 ft. E, C Sec. 17-20-15. Set 5½-in. 1,338 ft.; T.D. 1,640 ft.; will acd.

Stanolind O. & G. Co No. 1, 131 Dillon hrs., C SE NE Sec. 14-21-15. Ran Schmb. 9,109 ft.; T. Smkvr. L. 8,952 ft.; ran Schlmb. 10,164 ft., T.D.; set 7-in. csg. to bttm.; W.O.C.

Joe G. Strahan's No. 1-B Stiles, 330 ft. S, 1,000 ft. E, NW cor. Sec. 32-21-16. R.U.

Sultana Drlg. Co.'s No. 1 Bain, 198 ft. W, 480 ft. N, SE cor. Sec. 4-23-15. Drlg. 700 ft.

Texas Co.'s No. 6 La. Co. fee, 2,159 ft. S, 436 ft. E, NW cor. NE¼ Sec. 1-20-16. Drlg. sh. 408 ft.

Texas Co.'s No. 10-B Noel, 990 ft. S, 330 ft. W, NE cor. NW¼ Sec. 14-21-15. Set 6⅝-in. csg. 1,502 ft.; acd. 4,000 gal.; W.O.S.R. 1,648 ft.

Travis & Red Iron Drlg. Co.'s No. 1 Chandler et al, 819 ft. S, 2,086 ft. E, NW cor. Sec. 5-23-15. Set 9⅝-in. csg. 961 ft.; drlg. sh.&L. 5,037 ft.

Waldron & Barnes' No. 1 Ark. Fuel Oil fee, 438 ft. N, 1,368 ft. E, SW cor. NW SE Sec. 1-20-16. R.U.

Caldwell Parish

Critchett & Woods (formerly E. T. Oakes) No. 1 Kyles NE cor SW NE Sec. 18-11-3e. Fsg. D.S. 4,975 ft.

Claiborne Parish

Lisbon Explin. Co. No. 1 Roberts Vaughn, 330 ft. N, 660 ft. E, SW cor. NW NE Sec. 36-21-5. O.W.D.D.; O.T.D. 5,313 ft.; recmtd. 7-in. csg. 5,343 ft.; T. Tr. Pk. 5,405 ft.; T. lower Marine form. 7,833 ft.: gas and dist. sd. 8,817-48 ft., hd. and tight; set 5-in. csg. 8,-900 ft., T.D.; W.O.C.

Oakes & Shadrup's No. 1 Lloyd, 660 ft. S, 722 ft. E, C Sec. 10-20-5. Set 10¾-in. csg. 700 ft.; W.O.C.

De Soto Parish

N. W. Hunter's No. 1 Anders-LeBlanc, C NW SE Sec. 5-11-14. Set 10-in. csg. 590 ft.; drlg. sh. 2,119 ft.

Murray Davis' No. 1 Russell, 50 ft. N, 500 ft. W, SE cor. NE NW Sec. 12-11-16. D.S.T. 2,725-36 ft.; rec. 1,000 ft. S.W. in 33 min.; W.O.; T.D. 2,736 ft.

C. H. Tuttle No. 2-A Wemple, E NW cor. SW ¼ Sec. 14-12n-11w. T. bkn. sd. 2,640 ft.; 6⅝-in. csg. 2,557 ft.; tstg. 2,698 ft.; C.O.

Franklin Parish

Continental Oil Co.'s No. 1 J. T. Carroll et al, 330 ft. NW cor. Sec. 26-13-8e. Drlg. sh. 3,352 ft.

La Salle Parish

Smith Bros.' No. 1 Kenney, 660 ft. S 150 ft. W, C Sec. 7-10-2e. T. sd. 1,517 ft.; set 8¼-in. csg. 1,517 ft.; T.D. 1,-527 ft.; tstg. 1,527 ft.

Morehouse Parish

Union Prod. Co. No. 1-A Tensas-Delta. 1,894 ft. W, 1,584 ft. S, NE cor. SE Sec. 8-22-4. Set 20-in. csg. 125 ft.; 16-in. csg. 712 ft.; set 10¾-in. csg. 2,448 ft.; drlg. hd. sdy. L. 8,094 ft.

United Carbon Co.'s No. 3 Tulsa fee, Sec 4-21-5. Drlg. 1,430 ft.

Natchitoches Parish

Jack Lent et al's No. 1 Walker, C NE NE Sec. 9-10-10. 10-in. csg. 63 ft.; reported small S.O. 2,018 ft.; W.O.

Popkins & DeSoto Bros. No. 1 Peavy-Wilson Lbr. Co., 330 ft. NW cor. SE NW Sec. 36-7n-9w. O.W.W.O.; O.T.D 500 ft.; S.D. 2,700 ft.

Sabine Parish

Ed Bailey's No. 1 Hale, 330 ft. NW cor. NE NW Sec. 6-7-12. S.D. for wtr. 1,-228 ft.

A. R. Chestnut et al's No. 1 Sepulvedo, 990 ft. N, 330 ft. E, SW cor. Sec. 4-7-13. T. clk. 2,022 ft.; set 6-in. csg. 2,-027 ft.; W.O.C.

M. Lanza's No. 1 Phares, 330 ft. SE cor. NE SE Sec. 5-5-12. Drlg. sh. 2,030 ft.

W. E. Manners' No. 1 Stephens, C SW SE Sec. 17-9-11. Drlg. sh. 300 ft.

Oglesby & Baird's No. 1 Sabine Lbr. Co., SW cor. SW SE Sec. 5-7-13. T. clk. 2,-140 ft.; drlg. 2,383 ft.

K. R. Phillips' No. 1 Craig, 335 ft. S, 330 ft. E, NW cor. NW SE Sec. 22-9-13. D.D.; arng. test; T.D. 1,935 ft.

W. L. Posey No. 1 Rivers, C NW NW Sec. 26-8-13. 6-in. csg. 2,147 ft.; T.D 2,150 ft.; T. clk. 2,145 ft.; tstg. 2,510 ft.

W. M. Quick No. 1 Sabine, SE cor. NE SE Sec. 8-7-13. 6-in. csg. 2,061 ft.; T. D. 3,547 ft.; P.B. 2,350 ft.; tstg. small S.O.&wtr.

H. M. Sneed No. 1 Leone, SW cor. NW SE Sec. 8-7-13. T.D. 1,962 ft.; 6-in. csg. 2,061 ft.; W.O.S.R.; T.D. 2,116 ft.

S. E. Stack's No. 1 Gray, 330 ft. SW cor. Sec. 4-7-13. T. clk. 2,025 ft.; set 7-in. csg. 2,028 ft.; W.O. wtr.

J. E. Stack's No. 1 Weber, 330 ft. SE cor. SW NE Sec. 8-7-13. Set 10-in. csg. 42 ft.; W.O.C.

Sutton-Zwolle Oil Co.'s No. 3 Sabine, 1,-650 ft. S, 660 ft. E, NW cor. NE Sec. 23-7-14. S.D.

Union Parish

W. E. Hope O. & G. Co.'s No. 6 Frost Lbr. Ind., Sec. 26-22-3. Drlg. sh. 1,-807 ft.

Interstate Nat. Gas Co.'s No. 95 fee, Sec 36-22-3e. Set 8-in. csg. 770 ft.; W.O.C.

Memphis Nat. Gas Co.'s No. 1 Day, 951 ft. S, 277 ft. E, NW cor. Sec. 24-22-3e. R.U.

Memphis Nat. Gas Co.'s No. 2 Frost Lbr. Ind., Sec. 22-22-3e. 6⅝-in. csg. 2,132 ft.; W.O.C.

Southern Carbon Co.'s No. 33 Grayling. Sec. 30-22-4e. 6-in. csg. 2,089 ft.; tstg. 2,200 ft.

H. L. Woods' No. 1 Frost Lbr. Ind., 1,-980 ft. E, 660 ft. N, SW cor. Sec. 29-21-3. Set 6-in. csg. 2,081 ft.; W.O.C.

H. L. Woods' No. 1 Union Power, 1,980 ft. E, 660 ft. S, NW cor. Sec. 29-21-3. R.U.

Webster Parish

Geo. Barham's No. 2 Bodcaw, Sec. 15-21-10. O.W.D.D.; O.T.D. 4,732 ft.; R.U.

Hunt Oil Co.'s No. 3 Stewart, C NE NW Sec. 29-21-10. Drlg. sh. 2,836 ft.

Hunt Oil Co.'s No. 4 Stewart, 480 ft. S, 835 ft. E, NW cor. SW Sec. 32-21-10. Set surf. csg.; W.O.C.

Magnolia Pet. Co.'s No. 3 Cox, 672 ft W, 737 ft. N, SE cor. SE NE Sec. 22-21-10. Drlg. sh.&L. 5,245 ft.

Oliphant Oil Co.'s No. 2 Banks, 410 ft. S, 660 ft. E, NW cor. Sec. 2-20-10. Set 9⅝-in. csg. 5,611 ft.; drlg. sh.&sd. 6,872 ft.

Stanolind O. & G. Co.'s No. 4 Pardee, 660 ft. SE cor. Sec. 25-21-10. T. Tr. Pk. 5,829 ft.; 9⅝-in. csg. 5,950 ft.; drlg. 5,829 ft.; 9⅝-in. csg. 5,950 ft.; 9⅝-in. csg. 5,863 ft.; hole off 4°, whpstk. 6,-989 ft.; set 2nd whpstk. 7,258 ft.; drlg. sd.&sh. 7,327 ft.

Woodley Pet. Co.'s No. 2 Couch, 810 ft. S. 510 ft. W, NE cor. SW Sec. 35-21-10. 13⅜-in. csg. 683 ft.; set 9⅝-in. csg. 5,775 ft.; drlg. sdy. sh. 6,890 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 3 Brookshire. Sec. 66-12s-3e. T.D. 7,896 ft.; 6-in. csg 7,896 ft.; perf. csg. 7,886-90 ft.; I.P. 15 bbl. dist., 16 hrs.; 1/4-in. ck.

Continental Oil Co. No. 1 David Meaux, Sec. 9-12s-3e. T.D. 11,359 ft.; T. gas sd. 11,318 ft.; D.S. stk.; P.B. and side-tracked; drlg. 7,000 ft.

Continental Oil Co. No. 1 Franciol, Sec. 67-12s-3e. Drlg.

Stanolind O. & G. Co.'s No. 1 Lebocut, Sec. 33-12s-3e. Drlg. sh. 7,521 ft.

Bancroft—Beauregard Parish

Republic Prod. Co.'s No. 9 Columbia Ld. & Tmbr. Co., Sec. 15-6s-13w. T.D. 7,-330 ft.

Republic Prod. Co.'s No. 1 G. T. Whitman, Sec. 15-6s-13w. Drlg. sd.&sh. 6,-420 ft.

Republic Prod. Co.'s No. 1-B Whitman, Sec. 15-6s-13w. R.U.

Republic Prod. Co.'s No. 3 L. Whitman, Sec. 15-6s-13w. T.D. 7,662 ft.; 5½-in. csg. 7,662 ft.

Bateman Lake—St. Mary Parish

Texas Co. No. 1 St. Mary Parish Sch. Bd., Sec. 16-16s-12e. Gas sd. 11,169-79 ft.; cd. sd., dist. cut 11,516-19 ft.; drlg. sd.&sdy. sh. 11,560 ft.

Texas Co.'s No. 3 Way Bayou, Sec. 21 16s-12e. Loc.

Baton Rouge—East Baton Rouge Parish

W. V. Bowles' No. 2 Richard Community, Sec. 45-7s-1e. T.D. 6,522 ft.; 5½-in. csg. 6,522 ft.; perf. csg. 6,500-15 ft.; tstd. S.W.

Guaranty Oil Co. No. 2 Morgan, Sec. 65-7s-1w. T.D. 6,530 ft.; 5½-in. csg. 6,450 ft.; swbd. S.W.; S.D.

Wm. Helis' No. 3-B Duplantier, Sec. 68-7s-1w. T.D. 6,500 ft.; 7-in. csg. 6,478 ft. comp.; no ga.

Wm. Helis' No. 1 L.S.U., Sec. 67-7s-1w. Drlg. sh. 5,830 ft.

Wm. Helis' No. 4 Materiste, Sec. 66-7s-1w. T.D. 6,572 ft.; T. sd. 6,460 ft.

T. G. Markley et al No. 3 Knox. Amis-Farnbacher, Sec. 66-7s-1w. T.D. 6,478 ft.; run 7-in. csg.; comp.; no ga.

Marshland Oil Co.'s No. 1 J. B. McDonald, Sec. 45-7s-1e. T. sd. 6,477 ft.; T.D. 6,488 ft.; comp.; no ga.

Sugarfield Oil Co.'s No. 2 Irby Nichols, Sec. 45-7s-1e. T.D. 4,390 ft.; 5½-in. csg. 4,390 ft.; perf. csg. 4,345-67 ft.; tstd. dry gas.

Texas Canadian Oil Co.'s No. 2 Bogan-Davidson, Sec. 67-7s-1w. 6-in. csg. 18 ft.; S.D.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 19 State-Bay St. Elaine. Sec. 18-22s-18e. T.D. 6,500 ft.; 9⅝-in. csg. 6,400 ft.; T.D. 7,028 ft.; 7-in. csg. 7,028 ft.; perf. csg. 6,440-6,500 ft. tbg. plugged; drlg. out cmt. 6,537 ft.

Bayou des Glaise—Iberville Parish

Humble O. & R. Co. No. 1-B Wilbert Sec. 78-8s-8e. T.D. 3,025 ft.; 13⅜-in. csg. 3,000 ft.; T. salt 4,101 ft.; T.D. 4,182 ft.; S.D.

Humble O. & R. Co.'s No. 2-B Wilberts, Sec. 78-8s-8e. Loc.

Caillou Island—Terrebonne Parish

Wm. Helis' No. 5 L.S.U., Sec. 67-7s-1w.

Texas Co.'s No. 12 State, Sec. 20-23s-20e. T.D. 4,982 ft.; fsg.

Texas Co.'s No. 61 State, Sec. 17-23s-20e. T.D. 4,309 ft.; 7-in. csg. on bttm.

Cameron Meadows—Cameron

Magnolia Pet. Co. No. 25 Cameron Meadows, Sec. 21-14s-13e. T.D. 6,955 ft.; 7-in. csg. 6,494 ft.; perf. csg. 6,280-90 ft.

Chacahoula—La Fourche Parish

Sun Oil Co. No. 1 Cypress, Sec. 75-15s-15e. 13⅜-in. csg. 1,842 ft.; T. salt 6,-072 ft.; T.D. 6,088 ft.; P.B. 2,100 ft.; sdtrkd.; T.D. 6,553 ft.; fsg.; sdtrkd.; drlg. sh. 4,620 ft.

Sun Oil Co.'s No. 6 Dibert, Stark & Brown, Sec. 70-15s-15e. Loc.

Sun Oil Co. No. 2 Dodge Sunberry, Sec. 65-15s-15e. S.D. 4,259 ft.; T.A.

Chalkley Field—Cameron Parish

Humble O. & R. Co.'s No. 1 Cameron Sch. Bd., Sec. 16-12s-6w. Loc.

Humble O. & R. Co.'s No. 5 K. B. Hanzen, Sec. 9-12s-6w. Drlg. sh. 7,580 ft.

Humble O. & R. Co.'s No. 5 Sweet Lake Ld. & Oil Co., Sec. 7-12s-6w. Drlg. sh. &L. 7,572 ft.

Shell Oil Co., Inc.'s No. 4 Hanzen. Drlg. sh. 8,690 ft.

Charenton—St. Mary Parish

Pan American Prod. Co.'s No. 3-A H. Ecuer, Sec. 11-13s-9e. Drk.

Pan American Prod. Co.'s No. 17 Laws Realty Co., Sec. 31-13s-10e. Drlg. sdy. sh. 4,830 ft.

Pan American Prod. Co.'s No. 6 South Coast Corp., Sec. 31-13s-10e. Drlg. sh 6,420 ft.

Cheneyville—Rapides Parish

Amerada Pet. Corp.'s No. 7 Well Co., Sec. 54-1s-2e. Loc.

Gulf Oil Corp.'s No. 2 M. Pope, Sec. 56-1s-2e. Drlg. sh. 5,747 ft.

S. W. Richardson's No. 4 Well, Sec. 54-1s-2e. T.D. 5,796 ft.; 5½-in. csg. 5,796 ft.; perf. csg. 5,752-68 ft.

S. W. Richardson's No. 5 Well, Sec. 53-1s-2e. Drk.

Creole—Cameron Parish

Superior Oil Co.'s No. 9 State, Gulf of Mexico, Twp. 15s-8w. Drlg. sh. 4,290 ft.

Darrow—Ascension Parish

Humble O. & R. Co.'s No. 25 Community, Sec. 31-10s-2e. Drlg. sh. 4,030 ft.

Kiva Oil Co. No. 1 Dupiessis, Sec. 6s-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 23 State, Sec. 5-22s-16e. T.D. 7,429 ft.; P.B.; sdtrkd.; T.D. 6,-105 ft.; P.B.; sdtrkd.; drlg. sh. 6,600 ft.

Eola—Avoyelles Parish

Amerada Pet. Corp.'s No. 3 Glaze, Sec. 6-2s-3e. T.D. 8,556 ft.; 5½-in. csg. 8,-555 ft.; perf. csg. 8,435-30 ft.

Amerada Pet. Corp.'s No. 4 Glaze, Sec. 6-2s-3e. Drlg. sh. 7,134 ft.

Amerada Pet. Corp.'s No. 3 Irion, Sec. 6-2s-3e. R.U.

Amerada Pet. Corp.'s No. 6 Marchive, Sec. 6-2s-3e. T.D. 8,556 ft.; 5½-in. csg. 8,555 ft.; perf. csg. 8,440-8,515 ft.; I.P. 529 B.P.D.; ¼-in. ck.

Amerada Pet. Corp.'s No. 8 Marchive. Sec. 6-2s-3e. T.D. 8,570 ft.; S.D.

Amerada Pet. Corp.'s No. 1 White et al, Sec. 7-2s-3e. Drlg. sh. 4,030 ft.

G. W. Kenedy's No. 1 R. R. Irion, Sec. 1-2s-2e. R.U.

Geo. Lilly et al No. 1 Dent, Sec. 1-2s-2e. T.D. 8,579 ft.; 5½-in. csg. 8,576 ft.; perf. csg. 8,516-75 ft.; I.P. 390 B.P.D.; ¼-in. ck.

Sid Richardson No. 3 State-Bayou Bouef, Sec. 6-2s-3e. T.D. 8,575 ft.; 5½-in. csg. 8,574 ft.; perf. csg. 8,340-8,420 ft.; I.P. 407 B.P.D.; ¼-in. ck.

S. W. Richardson's No. 1-A Haas, Sec. 11-2s-2e. Drlg. sh. 5,600 ft.

Sun Oil Co.'s No. 2 Townsend, Sec. 8-2s 3e. R.U.

Fausse Point—Iberia Parish

Texas Co.'s No. 6 State, Twp. 11s-8e. 13⅜-in. csg. 1,407 ft.; drlg. sh. 4,130 ft.

Garden Island—Plaquemines Parish

Texas Co.'s No. 37 State, Garden Island, Sec. 38-23s-33e. Drlg. sh. 5,800 ft.

Texas Co.'s No. 39 State, Sec. 38-23s-33e. Drlg. sh. 100 ft.

Golden Meadows—La Fourche Parish

Acadian Prod. Co.'s No. 1 Dr. L. P. LeBlanc, Sec. 2-19s-22e. Drlg. sh. 2,600 ft.

Bennett Oil Co.'s No. 3 Cheramie, Sec. 12-19s-22e. R.U.

Berkshire Oil Co.'s No. 7 Nicol, Sec. 9-19s-22e. Drlg. sh. 1,830 ft.

Boller & Rutledge's No. 1 Burger Cheramie, Sec. 12-19s-22e. 10¾-in. csg. 803 ft.; drlg. sh. 2,100 ft.

Brown & Woods' No. 1 S. Hogan, Sec. 9-19s-22e. T.D. 2,710 ft.; P.B. to 1,-500 ft.

Peter Cioban's No. 1 Nat Alario, Sec. 2-19s-22e. R.U.

Golden Meadows Oil Co.'s No. 1 Whitney Rebstock, Sec. 2-19s-22e. Drk.

M. H. Marr and R. A. Bristol No. 1 Church property, Sec. 2-19s-22e. **T.D. 7,724 ft.; sdtrkd.; T.D. 9,007 ft.; P.B. and sdtrkd.;** T.D. 2,652 ft.; T. sd. 2,647 ft.; 7-in. csg. 2,647 ft.; tstd. S.W. and oil; P.B. 2,000 ft.; sdtrkd.; T.D. 2,666 ft.; T.S. 2,648 ft.; flwd. oil and S.W.; perf. csg. 2,647-64 ft.; flwd. gas and S.W.; went dead; T.A.

Martex Oil Co.'s No. 1 Rebstock, Sec. 2-19s-22e. Loc.

M. H. Marr & Vaughn's No. 2 Adam Terrebonne, Sec. 9-19s-22e. Drlg. 1,-610 ft.

S. Rhodes Drlg. Co.'s No. 1 Falgout Holding Co., Sec. 12-19s-22e. Drlg. sh. 2,430 ft.

S. Rhodes Drlg. Co.'s No. 2 Falgout Holding Co., Sec. 9-19s-22e. R.U.

St. Mary Oil Co.'s No. 1 Williams, Sec. 12-19s-22e. Drlg. sdy. sh. 2,630 ft.

Terouche Oil Co.'s No. 2 Cheramie, Sec. 12-19s-22e. Drk.

Texas Co.'s No. 4 Falgout Holding Co., Sec. 9-19s-22e. Loc.

Texas Co.'s No. 5 Falgout Holding Co., Sec. 9-19s-22e. Spd.

Texas Co.'s No. 4 L.L.&E., Golden Meadows, Sec. 78-19s-22e. Drlg. sh. 1,620 ft.

Texas Co.'s No. 6 L.L.&E.-Golden Meadows, Sec. 78-19s-21e. 10¾-in. csg. 573 ft.

Texas Co. No. 3 State-Catfish Lake, Sec. 76-19s-21e. T.D. 3,509 ft.; 7-in. csg. 2,-805 ft.; perf. csg. 2,740-62 ft.; W.O. S.R.

Texas Co. No. 1 Theriot, Sec. 12-19s-21e T.D. 10,100 ft.; 7-in. csg. on bttm.; perf. csg. 7,190-7,210 ft.; tstd. S.W.; perf. csg. 6,602-07 ft.; tstg.

Grand Bay—Plaquemines Parish

Gulf Oil Corp.'s No. 5-A Grand Prairie, Sec. 31-19s-19e. Drlg. sh. 7,420 ft.

Gulf Oil Corp. No. 6-A Grand Prairie Lv. Dist., Sec. 17-20s-10e. Drlg. sh. 9,-620 ft.

Gulf Oil Corp.'s No. 7-A Grand Prairie Lv. Dist., Sec. 5-20s-19e. Loc.

Gulf Oil Corp.'s No. 8-A Grand Prairie Dist., Sec. 5-20s-19e. Loc.

Gulf Oil Corp.'s No. 4 State, Sec. 20-19s-19e. Loc.

Texas Co. No. 1 State-Lookout Pass, Sec. 48-20s-18e. Loc.

Grand Lake—Cameron Parish

Superior Oil Co.'s No. 4 Grand Lake, Twp. 13s-4w. Drlg. sh. 6,096 ft.

Hackberry—Cameron Parish

Gulf Oil Corp. No. 25-A Erwin, Sec. 13-12s-10w. Drk.

Stanolind O. & G. Co.'s No. 20 Cameron Par. Sch. Ld., Sec. 16-12s-10w. T.D. 1,454 ft.

Superior Oil Co.'s No. 7 Benson Vincent, Sec. 30-12s-10w. Drlg. sh. 7,855 ft.

Texas Co. No. 27-B State, 623 ft. S, and 5,142 ft. E of SE cor. Sec. 12-12s-10w. in Twp. 12s-9w. T.D. 7,843 ft., salt; T. salt 7,839 ft.; P.B. 6,500 ft.; sdtkd.; drlg. sh. 6,950 ft.

Union Sulphur Co.'s No. 1 Simon Doiron, Sec. 37-12s-10w. Drlg. sh. 6,670 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co.'s No. 3 State, Sec. 40-17s-9e. Drlg. sh. 11,094 ft.

Jeanerette—St. Mary Parish

Herton Oil Co.'s No. 6 Roane, Sec. 38-13s-9e. Drlg. sh. 7,420 ft.

Jefferson Island—Iberia Parish

Texas Co.'s No. 3 Jefferson Salt Mining Co., Sec. 58-12s-5e. Drlg. sh. 6,934 ft.

Jennings—Acadia Parish

Carter-Perrin & Brian No. 1 Martel, Sec. 47-9s-2w. T.D. 1,916 ft.; 6-in. csg. 1,862 ft.; T.A.

Glassell-Glassell No. 8 Trusher, Sec. 4-9s-2w. Drlg. sdy. sh. 4,020 ft.

Shell Oil Co., Inc.'s No. 8 Community. Drlg. L. 5,213 ft.

Stanolind O. & G. Co. No. 115 Crowley Oil & Min. Co., Sec. 48-9s-2w. Drlg. sh. 6,430 ft.

Lafitte—Jefferson Parish

Texas Co. No. 14 Lafitte, Sec. 20-17s-24e. T.D. 4,599 ft.; P.B. 3,404 ft.; sdtrkd.

Texas Co.'s No. 4 Marrero, Sec. 21-17s-24e. Drlg. sh. 6,020 ft.

Lake Long—La Fourche Parish

Fohs Oil Co.'s No. 11 State, Twp. 17s-19e. 10¾-in. csg. 2,034 ft.; drlg. sh. 3,022 ft.

Lake Mongoulois—St. Martin Parish

Texas Co. No. 7 State, Sec. 10-10s-9e. 7⅝-in. csg. 10,604 ft.; T.D. 10,775 ft.; perf. csg. 10,220-40 ft.; testd. gas; sqzd. perf.; perf. csg. 9,739-49 ft.; tstd. 3,-000 lb. W.P.; perf. csg. 9,570-85 ft.; tstd. S.W.; perf. csg. 9,502-20 ft.; tstd. dry gas; perf. csg. 8,909-48 ft.; tstd. S.W.

Lake Pelto—Terrebonne Parish

Texas Co.'s No. 28 State, Sec. 7-23s-18e. Drlg. sh. 3,832 ft.

La Pice—St. James Parish

Shell Oil Co., Inc.'s No. 1 Lebermuth & Israel. Drlg. sh. 8,326 ft.

Shell Oil Co., Inc.'s No. 2 Natalbany Lbr Co., Sec. 19-9s-2e. Cg. sh. 8,825 ft.

Leoville—Plaquemines Parish

Texas Co.'s No. 72 L.L.&E., Sec. 27-21s-22e. T.D. 5,041 ft.; sdtrkd.; drlg. sh. 6,626 ft.

New Iberia—Iberia Parish

Wm. Helis' No. 7 Sabatier, Sec. 54-12s-7e. T.D. 2,217 ft.; 7-in. csg. 2,205 ft.; swb. S.W.

Wm. Helis No. 7 J. E. Schwing, Sec. 56-12s-7e. T.D. 8,850 ft.; P.B. 7,840 ft.; drlg. sd.&sh. 8,030 ft.

J. J. Hooper's No. 1 Marston, Sec. 51-12s-7e. Drlg. sh. 2,420 ft.

Texas Co. No. 2 Bryant, Sec. 25-12s-7e. R.U.

Texas Co.'s No. 11 J. P. Duhe, Sec. 26-12s-7e. T. salt 3,412 ft.; T.D. 3,415 ft.; P.B. 2,500 ft.; sdtrkd.; T.D. 3,777 ft.; 7-in. csg. 3,729 ft.; W.O.S.R.

Texas Co.'s No. 12 Duhe, Sec. 26-12s-7e. Drlg. sh. 1,200 ft.

Texas Co.'s No. 1 Polk Hebert, Sec. 25-12s-7e. Bldg. rd.

Texas Co.'s No. 3 Schwing, Sec. 71-12s-7e. Drlg. sh. 5,820 ft.

Texas Co.'s No. 1 H. Perry Walet, Sec. 2-12s-7e. Drk.

North Crowley—Acadia Parish

Humble O. & R. Co.'s No. 6 Williams, Sec. 33-8s-1e. T.D. 7,199 ft.; 7-in. csg. 7,195 ft.; I.P. 16 B.P.H.; 1/4-in. ck.

North Elton—Allen Parish

Stanolind O. & G. Co.'s No. 1 G. W. Jenkins, Sec. 23-6s-3w. Drlg. sh. 4,864 ft.

Paradis—St. Charles Parish

Texas Co. No. 2 L.L.&E. Paradis, Sec. 6-14s-20e. Cd. sd., dist. odor 10,085-89 ft.; T.D. 10,497 ft.; 7-in. csg. 10,497 ft.; tstg.

Port Barre—St. Landry Parish

Gulf Oil Corp.'s No. 17 Wilson-Broach, Sec. 4-6s-5e. R.U.

Pan American Prod. Co.'s No. 4 Cormier, Sec. 4-6s-5e. T.D. 5,425 ft.; perf. csg. 4,959-65 ft.; tstd. S.W.; drlg. sh. 4,-456 ft.

Pan American Prod. Co.'s No. 5 Garland, Sec. 4-6s-5e. Drlg. sh. 2,036 ft.

T. D. Spill No. 1 Gaudet, Sec. 4-6s-5e S.D. 4,700 ft.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 40 Orleans Lv Bd., Sec. 13-18s-15e. Drlg. sh. 5,630 ft.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp.'s No. 3-A Plaquemines Ld. Co., Sec. 7-19s-17e. Drlg. sh. 5,026 ft.

Gulf Oil Corp. No. 9 State QQ, Sec. 15 19s-17e. Loc.

Gulf Oil Corp.'s No. 15 State, Twp. 19s-17e. Drlg. sh. 7,380 ft.

Sorrento—Ascension Parish

Sorrento Synd. No. 1 L. L. Bernard, Sec. 27-10s-4e. Drlg. sh. 7,212 ft.

South Houma—Terrebonne Parish

Shell Oil Co., Inc.'s No. 4 Peters, Sec 72-18s-18e. Drlg. sh. 8,614 ft.

Valentine—La Fourche Parish

Wm. Helis' No. 5 Valentine Sugars Inc., Sec. 2-17s-20e. 10¾-in. csg. 1,632 ft.; T.D. 7,845 ft.; P.B. 6,965 ft.

Pan American Prod. Co.'s No. 3-A Community, Sec. 10-17s-20e. Drlg. sh. 7,620 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co.'s No. 6 Buras Lv. Bd., Sec. 27-21s-30e. Drlg. sh. 10,120 ft.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 2 Corell, Sec 36-3s-2e. T.D. 10,380 ft.; 6-in. csg. 10,360 ft.; perf. csg. 10,230-45 ft.; tstd. S.W.

Continental Oil Co.'s No. 4 A. M. Fontenot, Sec. 46-3s-2e. Drlg. sh. 6,510 ft.

Continental Oil Co.'s No. 5 Fontenot, Sec. 26-3s-2e. Drlg. sh. 7,120 ft.

Continental Oil Co.'s No. 4 Hirsch, Sec. 44-3s-2e. Drlg. sd.&sh. 620 ft.

Continental Oil Co.'s No. 5 Opelousas, St. Landry, Sec. 44-3s-2e. T.D. 7,903 ft.; fsg.

Continental Oil Co.'s No. 1 Phillip Fontenot, Sec. 44-3s-2e. Spd.

Continental Oil Co.'s No. 4 Pitre, Sec. 44-3s-2e. R.U.

Continental Oil Co.'s No. 1 J. E. Vidrine, Sec. 41-4s-2e. Drlg. sh. 6,130 ft.

J. K. Hughes' No. 1 J. E. Ortego, Sec. 36-3s-2e. Cg. sdy. sh. 10,226 ft.; cd. sd. S.O.&G. 9,960-90 ft. and 10,122-60 ft.

West Gueydan—Vermilion Parish

Magnolia Pet. Co.'s No. 2 A. Cormier Sec. 5-12s-2w. T.D. 7,256 ft.; 7-in. csg. 7,256 ft.; perf. csg. 7,148-52 ft.; I.P. 97 B.P.D.; 16/64-in. ck.

West Lake Verret—St. Mary Parish

Shell Oil Co., Inc.'s No. 4 Jeanerette. Loc.

Shell Oil Co., Inc., No. 1 Michel, Sec. 1-14s-12e. T.D. 11,678 ft.; abd.

White Castle—Iberville Parish

Shell Oil Co., Inc.'s No. 1 Baist. T.D. 5,972 ft.; rmg.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 1 Raymond Hebert, Sec. 6-9s-5w. T.D. 9,575 ft.; 7-in. csg. 9,575 ft.; perf. csg. 9,514-19 ft.; flwg. S.W. and gas.

Union Sulphur Co.'s No. 1 E. A. Norton, Sec. 12-9s-5w. R.U.

Union Sulphur Co. No. 3 Mrs. O'Miller Sec. 7-9s-5w. Drlg. sh. 7,742 ft.

Woodlawn Oil Corp.'s No. 1 Hebert, Sec. 1-9s-6w. Drlg. 6,130 ft.

S. LOUISIANA WILDCATS

Acadia Parish

Tri Parish Drillers, Inc., No. 1 Pau' Stag, Sec. 4-7s-1w. M.I. rig.

Allen Parish

Bel Oil Co. No. 2 J. A. Bell Est. (Blue Springs). Drk.

Assumption Parish

Shell Oil Co., Inc.'s No. 1 C. S. Eellis. Sec. 9-16s-14e. Drlg. sh. 3,875 ft.

Beauregard Parish

Atlantic Ref. Co. No. 1 Lutcher Moore Sec. 22-3s-11w. Loc.

Atlantic Ref. Co. No. 1 Rice Ld. & Lbr Co., Sec. 22-3s-11w. Loc.

California Co.'s No. 2 Long Bell Lbr Co., Sec. 12-5s-10w. Drlg. sh. 8,750 ft.

Republic Prod. Co.'s No. 9 Lutcher Moore Lbr. Co., Sec. 1-7s-12w. Drlg. sh. 6,392 ft.

Calcasieu Parish

C. L. Arnette's No. 1 Arthur Welch, Sec. 19-10s-12w. 10¾-in. csg. 130 ft.; T.D. 395 ft.; S.D.

Gulf Oil Corp.'s No. 1 Amanda Brannon, Sec. 16-11s-10w. Drlg. sh. 8,602 ft.

Cameron Parish

Humble O. & R. Co.'s No. 1 fee, Sec. 7-15s-14w. T.D. 7,117 ft.; abd.

Phillips Pet. Co.'s No. 1 Miami Corp., Sec. 11-14s-6w. Bldg. rd.

East Baton Rouge Parish

Farris & Golding Drlg. Co.'s No. 1 D. E. McEnnis, Sec. 58-7s-1e. 20-in. csg. 42 ft.; 10¾-in. csg. 1,747 ft.

Iberia Parish

Plymouth Oil Co. et al's No. 1 Lynch McHugh, Sec. 13-12s-10e. Drlg. 75 ft.

Jefferson Parish

California Co. No. 1 Adam Rutley, Sec. 2-16s-23e. 20-in. csg. 163 ft.; 13⅜-in. csg. 1,980 ft.; 9⅝-in. csg. 8,496 ft.; T.D. 12,222 ft.; perf. csg. 8,204-14 ft.; flwg. 7 B.P.H.; ⅛-in. ck.

Continental Oil Co. No. 1 Bernstein, Sec. 2-16s-23e. Drlg. sh. 9,564 ft.

Jeff Davis Parish

Housh & Thompson's No. 1 Lacassine, Sec. 29-11s-5w. Cg. sh. 8,781 ft.

Lafayette Parish

Stanolind O. & G. Co.'s No. 1 Lacaze Billeaud et al, Sec. 35-10s-5e. Drlg. sh. &L. 8,790 ft.

La Fourche Parish

Gulf Oil Corp. No. 2 Grandison, Sec. 21-20-23e. 13⅜-in. csg. 2,090 ft.; drlg. sh. 10,120 ft.

Tide Water Asso. Oil Co. No. 1 Delta Farms, Inc., Sec. 6-17s-23e. Drlg. sh 9,537 ft.

Livingston Parish

Humble O. & R. Co.'s No. 1 Great Southern Lbr. Co., Sec. 27-7s-5e. T.D. 9,324 ft.; abd.

Orleans Parish

W. T. Burton No. 1 L.&N.R.R., Sec. 18-11s-15e. T.D. 10,394 ft.; 5½-in. csg. 10,274 ft.; S.D.

St. Bernard Parish

Gulf Ref. Co. No. 4-State-R.R. (Lake Borgne), Twp. 12s-15e. 9⅝-in. csg. 8,161 ft.; T.D. 10,632 ft.; P.B. 9,700 ft.; rmd. to 9,658 ft.; lost core bbl.; P.B sdtrkd. 8,912 ft.; T.D. 10,528 ft.; 7-in. csg. 10,494 ft.; fsg.

St. John the Baptist Parish

Pan American Prod. Co. No. 1 Mill, Sec. 12-11s-7e (LaPlace prospect). 10¾-in csg. 2,837 ft.; T.D. 8,896 ft.; D.S.T. 8,870-96 ft.; tstd. 600 lb. W.P.; rec. 10 gal. dist.; T.D. 10,147 ft.; rmg.

St. Martin Parish

Wm. Helis' No. 2 Levert Plantation, Sec. 33-9s-7e. Drlg. sh.&sd. 4,027 ft.

Wm. Helis' No. 1 Rycade Oil Co., Sec. 33-9s-7e. Drlg. sd.&pyte. 6,121 ft.

Shell Oil Co., Inc., No. 1 Iberville Ld. Co., Sec. 86-8s-7e. T.D. 9,746 ft.

St. Mary Parish

Perry S. Cooney No. 1 A. W. Allain, Sec. 46-13s-9e. S.D. 2,600 ft.

Terrebonne Parish

Barnsdall Oil Co.'s No. 1 Nelson, Sec. 2-21s-11e. Loc.

Continental Oil Co. et al's No. 1 Peters Sec. 32-19s-15e. 13⅜-in. csg. 1,987 ft.; drlg. sh. 8,985 ft.

Shell Oil Co., Inc., No. 1-A Peters, Sec 47-19s-19e. T.D.; abd.

Vermilion Parish

La. Ld. & Explo. Co.'s No. 3 La. Fur Co., Sec. 9-15s-1e. Drlg. sh. 5,519 ft.

Texas Co.'s No. 1 Vermilion Par. Sch. Bd., Sec. 16-13s-4e. Drlg. sh. 1,977 ft.

TEXAS

Week Ending November 4

GULF COAST FIELDS

Anchor—Brazoria County

Humble O. & R. Co.'s No. 1 M. W. Mettler, J. de Jesus Valderas Sur. 13⅜-in. csg. 944 ft.; 9⅝-in. csg. 7,139 ft.; T.D. 7,363 ft.

Glenn McCarthy's No. 1 Ida M. Salmon and John Muma, Geo. Robinson Sur. T.D. 6,860 ft.; 9⅝-in. csg. 6,860 ft.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 6 Armstrong-fee, Polly-Chance Sur. T.D. 10,421 ft.; tstg.

Harrison-Abercrombie's No. 7 Armstrong, Polly & Chance Sur. Drlg. sh. &sd. 8,816 ft.

Harrison & Abercrombie's No. 1 Berthelsen, C. Breen Sur. Drlg. sh.&L. 9,156 ft.

Stanolind O. & G. Co.'s No. 1 Giles, C. Breen Sur. Loc.

Sun Oil Co.'s No. 3 Borsodi, C. Breen Sur. Drk.

Sun Oil Co.'s No. 3 Campbell, C. Breen Sur. 13⅜-in. csg. 1,506 ft.; 9⅝-in. csg. 7,008 ft.

Cedar Point—Chambers County

Standard Oil Co. of Texas' No. 24-118 State. Top oil sd. 5,943 ft.; 7-in. csg. 6,005 ft.; perf. csg. 5,945-80 ft.; flwd. 20 B.P.H.; ¼-in. ck.; killed; gas-oil ratio high; retstg.

Standard Oil Co. of Texas' No. 55-119 State. Loc.

Seabreeze—Chambers County

Sun Oil Co. No. 2 Hoffman, T.&N.O. Sur. No. 131. T.D. 8,400 ft.; W.O.C.

Turtle Bay—Chambers County

Stanolind O. & G. Co.'s No. 2 State, Tr. 39. Driving piling.

Garwood—Colorado County

Davis & Co., Inc., No. 1 J. R. McLane, I.&G.N. Sur. 41. T.D. 9,315 ft.

Big Creek—Fort Bend County

Merrimac Oil Corp. No. 1 George, B. Wickson Sur. (SW flank). Spd. and S.D.

Caplen—Galveston County

Sun Oil Co.'s No. 3 Cade, A. Dickson Sur. 10¾-in. csg. 1,939 ft.; drlg. sh. 4,026 ft.

League City—Galveston County

Phillips Pet. Co.'s No. 1 Brittnacher, S. F. Austin sur. Drlg. sh. 7,220 ft.

Phillips Pet. Co.'s No. 6 Lobit, Perry-Austin Sur. Drlg. sh. 7,160 ft.

Phillips Pet. Co. No. 1 Dr. O. Patton (1 mi. E of production). Perf. csg. 9,177-97 ft.; flwd. S.W.; sqzd. perf.; C.O.

Phillips Pet. Co.'s No. 2 J. S. Rice est., J. M. Perry & Austin Sur. Drlg. sh. 8,567 ft.

Phillips Pet. Co.'s No. 3 Stewart Title Guaranty Co., S. F. Austin Sur. R.U.

Phillips Pet. Co.'s No. 4 Stewart Title Guaranty Co., S. F. Austin Sur. 10¾-in. csg. 3,520 ft.; drlg. sh. 9,200 ft.

Phillips Pet. Co. No. 1 Wimhurst (NW extension). T.D. 10,962 ft.; well tried to blow out; D.S. stk.; P.B. 10,630 ft.; perf. csg. to test.

Aldine—Harris County

Earl C. Hankamer's No. 1 O. P. Hairgrove, S. L. Noble Sur. T.D. 7,233 ft.; abd.

Bammel—Harris County

H. M. Harrell's No. 1 Graves, C. Walters Sur. Loc.

H. M. Harrell's No. 1 R. M. Thornton, Ehrhardt & Ketchum Sur. T.D. 6,200 ft.; tstg.

Clear Lake—Harris County

Humble O. & R. Co.'s No. 22-C Humble-West, J. Roth Sur. Drlg. sh. 3,730 ft.

Humble O. & R. Co.'s No. 24-C Humble-West, Wm. Doble Sur. T.D. 5,860 ft.

Friendswood—Harris County

Humble O. & R. Co.'s No. 18 Kiesling, T. Choate Sur. T.D. 6,046 ft.; comp.; no ga.

Texana—Jackson County

Moore-Ahern's No. 1 Clement, Stephen F. Austin Sur. Drlg. L. 6,145 ft.

Fannett—Jefferson County

Gulf Oil Corp.'s No. 12 Burrell, W. H Smith Sur. T.D. 3,625 ft.; D.S.T. 3,614-35 ft.; rec. 34 thrib. oil; 7-in. csg. 3,629 ft.; flwd. oil and S.W.; killed to D.D.

La Belle—Jefferson County

Sun Oil Co. No. 5 Broussard-Hebert, T. &N.O. Sur. No. 207. T.D. 8,710 ft.; perf. csg. 8,685-90 ft.; flwd. S.W.; made sqze. job; perf. csg. 8,667-71 ft.; tstd. S.W.; made sqze. job; S.D.

Lovells Lake—Jefferson County

J. H. Blaffer's No. 1 Williams, Wm. Carr Sur. Loc.

Humble O. & R. Co.'s No. 2-B Steinhagen, A. O. O'Donnell Sur. T.D. 7,785 ft.; 5½-in. csg. 7,796 ft.

Humble O. & R. Co.'s No. 3-B Steinhagen, A. O. Donnell Sur. Drk.

Stanolind Oil & G. Co.'s No. 1-B Steinhagen, H. O. Donnell Sur. T.D. 7,800 ft.; 5½-in. csg. 7,800 ft.; perf. csg. 7,775-80 ft.

Esperson—Liberty County

General Crude Oil Co.'s No. 7-B Esperson, A. McNell Sur. Drlg. sh. 6,530 ft.

General Crude Oil Co.'s No. 9-B Esperson, A. McNell Sur. Drlg. sh. 5,712 ft.

Hull—Liberty County

Gulf Oil Corp. No. 115 Phoenix Dev Co., J. Devore Lge. (SE flank deep test). 9⅝-in. csg. 5,904 ft.; drlg. sh. 7,003 ft.

Martha—Liberty County

Pan American Prod. Co.'s No. 1 Hutcheson, Beasley Pruitt Sur. R.U.

Stanolind O. & G. Co.'s No. 1 R. G. Palmer, I.&G.N. Sur. 7. Drlg. sd. 925 ft.

Stanolind O. & G. Co.'s No. 1 H. F. Tyrell, I.&G.N. Sur. 7. 10¾-in. csg. 1,214 ft.; drlg. sh.&L. 4,340 ft.

Segno—Polk County

J. K. Dorrance's No. 5-A Wing, I.&G.N. Sur. Drlg. sh. 7,063 ft.

Gulf Oil Corp. No. 4 Quinn, A. Morales Sur. R.U.

Gulf Oil Corp.'s No. 23 Wing, P. Garcia Sur. T.D. 8,125 ft.; tstg.

Humble O. & R. Co.'s No. 18 BX Kirby Lbr. Co., P. Garcia Sur. Drlg. sh. 4,610 ft.

Jordan Drlg. Co.'s No. 1 E. H. Hughes, I.&G.N. Sur., Sec. 13. Drlg. sh. 3,312 ft.

Spurger—Tyler County

Republic Prod. Co.'s No. 26 fee, N. Hurd Sur. T.D. 7,705 ft.

Republic Prod. Co.'s No. 27 fee, N. Hurd Sur. Cg. 7,686 ft.

GULF COAST WILDCATS

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur Stephen F. Austin Sur. (Byran Mound). M.I.M.

Hamman Explin. Co. No. 1-B Darrington, State Prison Farm, F. Bingham Sur. Rig.

D. M. Hill's No. 1 Max Bader, Wm. Smeathers Lge. Loc.

Humble O. & R. Co.'s No. 1 Hiram Moore, Hooper & Wade Sur., Lot 27. Drk.

Humble O. & R. Co.'s No. 1 A. M. Smith, W. D. C. Hall Sur. Drlg. sh. 3,150 ft.

Glenn McCarthy's No. 1 E. W. K. Andrau, H.T.&B. Sur. 5. 10¾-in. csg. 3,512 ft.; drlg. sh. 5,631 ft.

Glenn McCarthy's No. 2 Houston Farm Dev. Co., J. Perry & E. Austin Sur. 7. 10¾-in. csg. 3,492 ft.; drlg. sh. 6,512 ft.

Mayo & Frazier's No. 1 Darrington, State Prison Farm, A. McFarlan Sur. R.U.

Titanic Oil Co.'s No. 1 Allen, J. G. and G. W. McNeel Lge. (Allen dome). Top hvng. sh. 4,830 ft.; T.D. 4,989 ft.; rmg.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.

J. R. Turnbull's No. 1 Kirby Lbr. Co., Chambers Co. Sch. Ld. Attempted D. S.T. 6,419-31 ft.; seat failed to hold; T.D. 6,431 ft.; 7-in. csg. 6,420 ft.; I.P. 7 B.P.H.; ¼-in. ck.; T.P. 150 lb.; C.P. 700 lb.; S.I.

J. R. Turnbull et al No. 1 W. C. Shepherd, R. A. Porter Sur. T.D. 6,466 ft.; 7-in. csg. 6,429 ft.; flwd. oil, gas, and wash wtr.; sanded up; sdtrkd. 6,463 ft.; T.D. 6,700 ft.; P.B.; perf. 6,457-65 ft.; S.D.

Colorado County

Cockburn Oil Corp. No. 1 R. W. Ferrs, H. Chrisman Sur. Loc.

Fort Bend County

H. C. Cockburn's No. 1 G. W. Burkett, Bundieck Sur. Loc.

Gulf Oil Corp.'s No. 1 Russell Brown, Wm. Pettus Sur. 10¾-in. csg. 1,228 ft.

H. Link & J. Mayo's No. 1 R. G. Foss, Sec. 63, H.&T.C. Sur. Loc.

Magnolia Pet. Co.'s No. 1 G. H. Huntington, Henry Scott Sur. Drlg. sh. 5,274 ft.

Superior Oil Co.'s No. 1 A. P. George, Wiley Martin Sur. Drk.

Galveston County

Sun Oil Co.'s No. 1-176 State. Drlg. sdy. sh. 7,921 ft.

Grimes County

Roan, Coker & Klle's No. 1 W. W. Greer, Patrick B. O'Connor Sur. 10¾-in. csg. 41 ft.; T.D. 2,825 ft.; abd.

Harris County

Temple Hargrave's No. 1 Herman Hospital, Wm. Hardin Sur. Drlg. sh. 6,950 ft.

Dick Schwab's No. 1 W. H. Robertson, Andrew Lawson Sur. T.D. 6,596 ft.; abd.

McDannaid Oil Co.'s No. 1 C. Brown, H. T.&B. Sur. 7. T.D. 6,903 ft.; rmg.

L. R Wilhite et al No. 1 Houston-Harris Co. Ship Channel, Nav. dist., Ezekiel Thomas Sur. 13-in. csg. 388 ft.; S.D 2,600 ft.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.

Matagorda County

Gulf Stream Oil Co.'s No. 1 G. W. Ziprian, Luke Lessassier Sur. Drk.

Pure Oil Co.'s No. 1 J. L. Woodhouse, Lewis De Moss Sur. R.U.

Van M. Vincent's No. 1 J. F. McNabb Est., E. R. Wightman Lge. Loc.

Montgomery County

David B. MacDaniel's No. 1 Hattie O. Baldwin, Walker Co. Sch. Ld. Sur. 10¾-in. csg. 1,230 ft.; drlg. sh. 4,020 ft.

T. J. Wood & J. R. Martin's No. 1 H. B. Fultz, Wm. C. Clark Sur. Loc.

Newton County

W. M. Oil Co.'s No. 1 W. A. Smith, Tex. Central R. R. Co., Sur. 2. Loc.

Orange County

American Eagle Oil Co. No. 2 Geo. Pell, Geo. A. Patillo Sur. Loc.

Polk County

Patrick-Tyrell Drlg. Co. No. 1 O. L. Jackson, C. Devore Sur. Loc.

San Jacinto County

F. J. Hynes No. 1 Foster Lbr. Co., M. Brown Sur. Rig.

F. J. Hynes No. 2 Foster Lbr. Co., M. Finch Sur. Loc.

Tyler County

Oil Equity Corp.'s No. 2 Kountz, E. Smith Sur. Loc.

Washington County

Mount Selman Oil Co. No. 1 Fritz Fuelberg, W. Lightfoot Sur. Drlg. sh. 2,580 ft.

Sunray Oil Co.'s No. 1 S. E. Lockhart, Gibson Kuykendall Sur. 10¾-in. csg. 1,192 ft.

Wharton County

Sam G. Harris et al's No. 1 C. T. Kountz, A.T.R.R. Sur., Sec. 51. Drlg. sd. 5,215 ft.

Houston Oil Co.'s No. 1 H. W. Hinze, Robt. Kuykendall Sur. (Spanish Camp area). R.U.

Humble O. & R. Co.'s No. 1 L. B. Henry, Napoleon B. Williams Sur. Loc.
J. F. Hutchins' No. 1 A. P. Borden, Euclid M. Cox Sur. Drlg. sh. 1,767 ft.
Dr. T. M. Neal No. 1 fee, Elisha Flack Sur. Loc.
Sun Oil Co.'s No. 1 Winnie M. Pool, G. H.&R.R. Sur. Drlg. sh. 7,105 ft.

S. W. TEXAS WILDCATS

Aransas County

Continental Oil Co.'s No. 1 St. Charles Co., R. D. Blassman Sur. 18⅝-in. csg. 290 ft.; T.D. 8,384 ft.; fsg.

Bastrop County

C. R. Franklin's No. 1 Oscar McDonald, Martha Barker Sur. Drk.
Marts & Beaven's No. 1 J. E. Ferguson, Jas. Doyle Sur. S.D. 1,725 ft.

Bee County

Coronado Corp.'s No. 1 Claude Heard, M.M.&J. Tool Sur. Spd.
Mills Bennett Prod. Co.-Anderson-Prichard Oil Corp.'s No. 1 D. E. Robinson, J. M. Uranga Sur. T. Wlx. sd. est. 7,531 ft.; cd. sd.&sh. good O.&G. odor; 14-min. D.S.T. 7,541-51 ft. rec. 15 ft. oil; 245 lb. W.P.; will core 10 ft. and make D.S.T.

Bell County

G. P. Shelton et al No. 1 Nelson, Michael Griffin Sur. S.D. 1,208 ft.

Bexar County

J. A. Tarver's No. 1 Florence Lam, Manuel de Luna Sur. 3. 6⅝-in. csg. 1,205 ft.; T.D. 1,692 ft.; cd. bkn. sh. 1,638-92 ft.; S.S.O.; tstg.

Blanco County

E. L. Nixon's No. 3 Crist, John McClenechen Sur. 94. S.D. 536 ft.

Brooks County

Magnolia Pet. Co.'s No. 1 Vivian Rust, La Gloria townsite subd. Cg. sd., dist. odor 5,988 ft.

Caldwell County

Dr. J. F. Atha's No. 1 G. W. Carter. Gideon Pace Sur. T.D. 1,793 ft.; 7-in. csg. 1,744 ft.; pmpg. an avg. 4 B.P.D.
Kean & Williamson's No. 1 E. E. Rector, J. Roberts Sur. Drlg. 310 ft.

Calhoun County

Continental Oil Co.'s No. 1 Powderhorn Co., Juan Cano Sur., Sec. 2, Blk. J. Drlg. sh. 1,702 ft.
Coronado Corp. No. 1 K. Welder, Hidalgo Sur., 3 mi. SE Seadrift. T.D. est. 8,310 ft.; S.D.; no report; "tight well."

Cameron County

Sal Vieja Oil Co. et al's No. 2 Gatewood Newberry, San Martin gr. T.D. 8,445 ft.; abd.

De Witt County

Atlantic Ref. Co.'s No. 1 Pearl Conwell, Chas. Lockhart Sur. Loc.
Marshall Purvis No. 1 Afflerback, L. W. Criswell Sur. S.D. 7,133 ft.

Duval County

J. B. Blanchard et al's No. 1 J. G. Lowe, J. G. Lowe Sur. Drlg. sdy. sh. 1,970 ft.
W. L. Catlin et al No. 1 Louis Escapule.
J. Poltevent Sur. No. 73. Loc.
Magnolia Pet. Co.'s No. 1 D.C.R.C. Urbano Suarez Sur. 300. R.U.
Mills Bennett Prod. Co. and Stanolind O. & G. Co.'s No. 2-A Ira Yates, E. N. Gray Sur. 224. Loc.
Standard Oil Co. of Texas' No. 1 Jack Casey, San Pedro de Charco Redondo gr. T.D. 6,746 ft.; 7-in. csg. to test 6,722 ft.; perf. csg. 5,334-45 ft.; tstd gas and dist.; S.I.

Falls County

J. Shaunfield No. 1 Barganier, J. M. Graham Sur. T.D. 1,195 ft.; Buda L.; S.S.O.; waiting on csg.

Goliad County

D. C. Matthews et al's No. 2 G. J. Swickheimer, Wm. Patterson Sur. (Fannin field). T.D. 3,512 ft.; abd.

Gonzales County

J. A. Walker et al's No. 1 C. L. Dubose, E. C. Coffman Sur. Drlg. 425 ft.

Guadalupe County

Pat Armstrong's No. 1 Ernst Saetl, J. D. Clement Sur. Drlg. sh. 810 ft.
Burton-Garvin & Womack's No. 2 Henry Weil, E. de Los Santos Coy Sur. No 93. R.U.
Knute Evjen et al's No. 1 W. C. Brawner, J. D. Pickens Sur. S.D. 30 ft.
E. A. Weyel et al's No. 2 Bertha Schaffl, Vicente Mitchell Sur. 52. Drlg. sh. 816 ft.

Jim Hogg County

W. C. Gray et al's No. 1 Rosa Palacios, G. W. Waddell Sur. S.D. 50 ft.
Humble O. & R. Co.'s No. 2 Mestena O. & G. Co., Francisco gr. Drlg. sh. 3,028 ft.
Mayfair Oil Corp.'s No. 1 I. R. Gutierrez, C. Gutierrez Sur. 164. Drlg. sh. 3,084 ft.
C. A. Nibert et al's No. 1 Yeager Sur. 20. S.D. 1,316 ft.

Jim Wells County

Austin Pet. Co. No. 1 H. M. Reed (8 mi. NW Orange Grove), J. Poltevent Sur. Cmtd. surf. pipe 190 ft.; S.D. 210 ft.
Rodney DeLange et al's No. 1 Maggie McNeill, Benito Lopez de Jean gr. Tstd. 450 lb. pres.; D.S.T. 4,762-80 ft.; T.D. 5,410 ft.; 5½-in. csg. 4,880 ft.; perf. csg. 4,786-90 ft.; flwd. 63 bbl. dist.; 20 hrs.; 7/64-in. ck.; T.P. 1,750 lb.; C.P. 1,900 lb.; S.I.; sqzd. per.; reperf. csg. 4,788-91 ft.; flwg. gas; ¼-in. ck.; T.P. 1,525 lb.; C.P. 1,900 lb.; S.I.
H. H. Howell et al's No. 1 N. Hinojosa. S.K.&K. Sur., Sec. 229. Drlg. sh. 2,630 ft.
Magnolia Pet. Co.'s No. 1 C. C. Hornsby, Los Olmos y Loma Blanca gr. T.D. 6,435 ft.; D.S. stk.; fsg.
Magnolia Pet. Co.'s No. 1 W. C. Hornsby (La Gloria field). Drlg. sh. 5,860 ft.
Magnolia Pet. Co.'s No. 1 E. H. Stolze et al, Los Olmos y Loma Blanca gr., Lot 16, Blk. 10. Cd. sd.&sh. dist. odor 6,586-6,637 ft.; drlg. sh. 6,890 ft.
V. J. Meyer and V. F. Simon's No. 2 Shear, A.B.&M. Sur. (Magnolia City field). T.D. 5,644 ft.; abd.
Trinity Drillers et al's No. 1 Temple Lbr. Co., Los Presenos de Arriba gr. Drlg. 1,620 ft.

Karnes County

Clyde Eckols' No. 1 J. M. Newberry, Carlos Martinez Sur. Drlg. sh. 1,220 ft.

Kendall County

C. M. Dewey's No. 2 Seidensticker, R. Davis Sur. No. 20. S.D. 714 ft.

Kimble County

A. L. Bierschwale's No. 1 F. W. Kraeke, Sur. 366. S.D. 424 ft.
C. H. Wolff & M. C. Moore No. 1 W. J. Wilkinson, Brook & Burleson Sur Sec. 24. S.D. 20 ft.

Kleberg County

Humble O. & R. Co.'s No. 1 J. M. Reed, Rincon De Santa Gertrudis gr. Drlg. sh. 3,067 ft.
Pure Oil Co.'s No. 1 State, Tr. 171 (Bird Island field). Drlg. sh. 7,967 ft.

La Salle County

John Vivian's No. 1 Louis Yeager, A.B. &M. Sur. 53. Cg. sh.&shls. 665 ft.

Lee County

Fred Pederson et al No. 1 Brown, David Hudson Sur. T.D. 6,655 ft.

Live Oak County

Loma Oil Co.'s No. 1 Vernor, John Turner Sur. 71. R.U.
A. R. Pohler's No. 1 A. J. Turner, Stephen Hays Sur. T.D. 899 ft.; 5½-in. csg. 890 ft.
L. W. Stieren's No. 3 Lange, Thos. Adams Sur. T.D. 1,497 ft.

McMullen County

J. C. Carter's No. 1 Thomas Franklin, E. L. Taylor Sur. 30. Loc.
Harrison & Ross' No. 1 T. A. Bracken, W. W. Allsberry Sur. 30. S.D. 832 ft.
Earl W. Rowe's No. 1 M. H. Reed, Seale & Morris Sur. 153. Drlg. sh. 942 ft.
C. D. Scarborough No. 1 First Natl. Bk. of Rosebud, Jas. Garner Sur. S.D. 1,515 ft.
Wellington Oil Co.'s No. 1 Sam Sanger, C. P. Smith Sur. 194. S.D. 2,754 ft.

Medina County

Elstone Oil Co.'s No. 1 Wm. Mann, J Campbell Sur. 24. 8¼-in. csg. 635 ft.; T.D. 1,070 ft.; 7-in. csg. 1,025 ft

Milam County

W. H. Lawrence et al's No. 1 J. F. Bartek, Jose De Pena. Sur S.D. 1,210 ft.

Nueces County

John Manley et al No. 1 Ruegg, Geo. H Pauls subd. of Driscoll ranch. Loc.
Stanolind O. & G. Co.'s No. 1 Jennie Thompson, J. V. L. de Herrera gr. (Riverside field). Cd. sd. sec. 4,878-4,919 ft.; T.D. 5,280 ft.; cmtd. csg. to test.

Refugio County

Hewitt & Daugherty's No. 3-A Rooke-Wagner, Jose Miguel Aldrete 4 Lge. and 1 Lge. gt. Drlg. sh. 5,912 ft.
Morgan Gulf Oil Corp.'s No. 1 J. M. Thomas, G. E. Cobian and Family Sur. T.D. 6,510 ft.; S.D.
Norsworthy Prod. Co. No. 1 Wood. John Sinnott Sur. T.D. 6,508 ft. (cor.); S.D.

San Patricio County

Seaboard Oil Co.'s No. 1 M. C. Smith. Juan Hart & Sons Sur. T.D. 7,296 ft.; 5½-in. csg. 7,108 ft.; perf. csg. 7,058-60 ft.; tstd. S.W.; perf. csg. 6,995-7,000 ft.; tstd. gas and dist.; perf. csg. 5,915-25 ft.; perf. csg. 5,380-88 ft.; flwd. S.W.; perf. csg. 6,995-7,000 ft.; I.P. 131 bbl. 58.7-gr. dist. per day; ¼-in. ck.
Wellington Oil Co.'s No. 2-B Welder, Victoriano Tares & Pedro Villareal Sur. T.D. 6,010 ft.; abd.

Starr County

H. L. Curry et al's No. 2 Tijerina, H.E. &W.T.R.R. Sur. 299. Drlg. shls. 630 ft.
C. L. Foster's No. 1 H. Garza. Juan Salinas, Porc. No. 71. S.D. 100 ft.
W. E. Gilbert's No. 1 Escobas, Jose F. Garza, Porc. 71. S.D. 106 ft.
Gilcrease Oil Co.'s No. 1 I. G. Gutierrez, J. LaGarza Falcon Porc. 104. T.D. 2,505 ft.; abd.
Lynes & Robertson's No. 1 Villareal, C. C.S.D.&R.G.N.G.R.R. Sur. 241. Loc.

Victoria County

Colton & Colton's No. 1 E. Terrell, A. Sideck Sur. Drlg. sh. 4,417 ft.
Houston Oil Co.'s No. 1 E. C. Dietzel, P. Gallardo Sur. T.D. 5,171 ft.; logged O.S. 4,828-38 ft.; P.B. 4,835 ft.; perf. csg. 4,826-29 ft. and 4,829-32½ ft.; comp. for gas well.
Renwar Oil Corp.'s No. 1 M. L. Stoner, Diego Garcia Sur. Drlg. sh. 3,020 ft.
Stewart Boyle's No. 1 Simon, Victoria Four Lge. Drlg. sh. 270 ft.
Wellington Oil Co. et al's No. 1 J. W. Boothe, T.&N.O. Sur., Blk. 1, Sec. 10. Drlg. sh. 8,460 ft.

Webb County

W. C. McBride, Inc.'s No. 1 Manuel Vela, C.C.S.D.&R.G.N.G. Sur. 265. Drk.
Mayfair Oil Corp.'s No. 3 Bruni, J. V. Borego gr. Drk.
Tide Water Asso. Oil Co. No. 7 Bruni. Blk. 7, M. Arispe gr, (deep test Bruni field). T.D. 8,031 ft.; fsg.

Williamson County

Brown-Gardner et al's No. 1 G. W. Griffin, Harrison Owens Sur. S.D. 2,214 ft.
Knisely, Aldridge, Cockburn's No. 1 D. M. Sloan, J. W. Baker Sur. 2. Drlg. 1,062 ft.
Williams & Vick's No. 1 Mrs. Schram, Willis West Sur. Drlg. L. 1,415 ft.

Zapata County

J. P. Martin et al's No. 1 Serapio Vela, El Grullo gt. R.U.
Neilson & Wise's No. 1 Maryland Tr. Co., J. H. Vermillon Sur. 314. R.U.
Transwestern Oil Co.'s No. 1-L Trevino, S.K.&K. Sur. 63. Cg. 1,664 ft.

WEST TEXAS WILDCATS

Brewster County

H. D. Wilcox's No. 2 Kokernot, Sec. 23. Blk. C, J. V. Massey Sur. S.D.O. 1,610 ft.

Cochran County

Atlantic Ref. Co.'s No. 1 Boyd, Labor 11, Lge. 56, Oldham C.S.L. S.D.R. 4,927 ft.
Dean & Hyde's No. 1 Reed & Taylor. Sec. 21, Harrison & Brown Sur., SE of Duggan pool. Drlg. 4,674 ft.
Humble O. & R. Co. No. 1 J. Westheimer, Lab. 1, Lge. 146, Stonewall Co. Sch. Ld. Drlg. 7,402 ft.

Crane County

Gulf Oil Corp. No. 5 M. B. McKnight Sec. 1, Blk. 21-B, P.S.L. Sur. Drlg. 5,605 ft.
Gulf Oil Corp.'s No. 12 Waddell, Sec. 30, Blk. 26-B, P.S.L. Sur. Drlg. 55 ft.

Crockett County

Kimberlin's No. 1 J. W. Robbins, Sec. 4, Blk. B, G.C.&S.F. Sur. Drlg. 790 ft.
Moore Bros.' No. 1 Henderson, Sec. 51, Blk. O.P., G.C.S.F. Sur. Loc.

Crosby County

Gulf Oil Corp. No. 1-C Swenson, Sec. 98, Blk. 2, H.&G.N. Sur. Cg. 8,047 ft.

Dawson County

Ray Albaugh's No. 1 Dewey Hogg (O. W.D.D.). S.D.R. 4,212 ft.

Ector County

I. T. I. O.'s No. 1-B Johnson, Sec. 39, Blk. 43, T.&P. Sur. Drlg. 4,162 ft.; S. S.O. 4,100-08 ft. and 4,132-38 ft.

Gaines County

Stanolind O. & G. Co.'s No. 1 American Warehouse, Sec. 5, D.&W. Sur., offset to No. 1 Rayner, discovery well. Drlg. 785 ft.
Stanolind O. & G. Co.'s No. 1 T. S. Riley, Sec. 11, Blk. H, D.&W. Sur. W.O.W.

Hockley County

Geo. P. Livermore's No. 1 R. D. Glimp, Sec. 8, Blk. X, P.S.L. Sur. Loc.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co. Sec. 151, H.E.W.T. Sur. S.D.O. 4,550 ft.

Pecos County

B. McCandless and General Crude Oil Co.'s No. 1 Virginia W. Crockett, Sec. 5, Blk. 110, T.C.R.R. Sur. Loc.
Stanley Thompson No. 1 Elsinore Cattle Co., Sec. 54, Blk. D, G.C.&S.F. Sur. Drld. by 7,073 ft.; 500 ft. S.W. in hole; S.D.O. 7,342 ft.
Superior Oil Co. No. 1 V. W. Crockett Continental Oil Co., Sec. 7, Blk. 110 T.C.R.R. Sur. C.&P.

Reeves County

T.A.T. Oil Co.'s No. 1 U. G. Orenderff, Sec. 10, Blk. 59, P.S.L. Sur. Spd. and S.D. at 9 ft.

Scurry County

Coffield & Guthrie's No. 1 Reiter, Sec 155, Blk. 97, A.&T.C. Sur. U.R. 10-in. 524 ft.

Terrell County

T. M. Thomasson No. 1 Bates, Sec. 31 Blk. 1, H.&G.N. Sur. S.D.O. 1,117 ft.

Tom Green County

Dan Short's No. 1 J. G. Davidson, NW part of Lovie P. Moore Sur.; 3,500-ft test. Fighting cave 2,620 ft.

Ward County

Gulf Oil Corp. No. 5 Wristen, Sec. 18 Blk. 5, H.&T.C. Sur.; scheduled Ordovician test. Straightening hole; drlg. out 2,645 ft.
Magnolia Pet. Co.'s No. 2-43 Sealy, Sec 43, Blk. F, G.M.M.B.&A. Sur. W.O. 2,952 ft., T.D.; making 69,000,000 cu. ft. gas.
Merry Bros. & Perini's No. 1 Bird Hayes, Sec. 148, Blk. 34, H.&T.C. Sur. Loc.

Yoakum County

Sloan & Zook and T. N. Sloan's No. 1 J. E. Fitzgerald, Sec. 22, Blk. D, Gibson Sur., extreme NE cor. of county. U.R. 238 ft.

TEXAS PANHANDLE

Deaf Smith County

Ascan No. 1 Farwell, Sec. 18, Blk. 3, X Sur. C.O. 5,650 ft.

Hartley County

Phillips Pet. Co. No. 1 W. K. Gordon, Sec. 3, Blk. 44, H.&T.C. Sur. Drlg. 3,455 ft.; showed 34,300,000 cu. ft. gas below 3,415 ft.; P.B. for gas well 3,415 ft.; S.D. for test 3,415 ft.

Lipscomb County

Phil O'Neil's No. 1 Jacob Koch. NW¼ SW¼ Sec. 539, T.&T.C.R.R. Sur. S.D. 1,100 ft.

Ochiltree County

James R. Macon et al No. 1 W. R. Norris, SW SE Sec. 212, Blk. 43, H.&T.C. Sur. Bailing rotary fluid preparatory to resuming drlg. with C.T.; T.D. 6,274 ft prep. acd. and test sec. at 5,000 ft.; est. 6,000,000 cu. ft. gas on D.S.T.; cmtd. bridge 4,000 ft.

Potter County

Les Whitaker No. 1 D. Pavillard, Sec 101, Blk. 2, A.B.&M. Sur. Fish out; S.D. 915 ft., csg.

Sherman County

Hagy, Harrington & Marsh's No. 1 W. Freeman, Sec. 46, Blk. 2, G.H.&H. Sur. R.U.S.T. 2,710 ft.
I.T.I.O.'s No. 1 S. C. Bryant, NW¼ Sec. 369, Blk. 1-T, T.&N.O. Sur. R.U.R.

E. C. TEXAS WILDCATS

Anderson County

A. Baggett's No. 1 J. R. Gillispie, J. R. Ferguson Sur., 2½ mi. NE of Frankston. S.D. 4,350 ft.
R. H. Williamson No. 1 O. G. Rogers, Wm. Greenwood Sur., 6 mi. SW of Elkhart. Drlg. 4,417 ft.

Angelina County

Ginter Bros. No. 7 Copes Hrs., J. Morin Sur., 3 mi. E of Diboll. S.D. 800 ft.
K. L. McHenry's No. 2 Russell est., A. Flores Sur., 4 mi. N Lufkin. Prep. rng. csg. topped sd. 1,002 ft. 2 B.O. and 4 B.W. in 5 min.; R.U. pmp. 1,004½ ft.

Falls County

R. D. Salisbury No. 1 W. M. Shankle, J. A. Manchaca Sur., 1½ mi. NE Chilton. S.D. 1,274 ft.

Fannin County

H. W. English's No. 1 T. W. Ayers, J. D. Seales Sur. S.D. 687 ft.
C. Newburn's No. 1 A. G. Allen, M. Caldwell Sur., 7 mi. NE of Banham. Drk.

Grayson County

Ross & Marshall's No. 2 E. Christman, M. Ahult Sur., 5 mi. NW of Denison. S.D. 852 ft.; S.S.O. 842-43 ft.
Rutledge Oil Co.'s No. 1 Williams, S. Nix Sur., 2 mi. NE of Van Alystine. Drlg. 4,458 ft.

Hill County

Carter-Bowland's No. 1 J. J. Atchison estate, E. Carrol Sur., 5 mi. W of Hillsboro. S.D. 85 ft.

Houston County

I. C. Cook and Shell Oil Co.'s No. 1 B T. Masters, Levina Carpenter Sur., ½ mi. NW of Grapeland pool; 10,000-ft. test. S.D. csg. 6,060 ft.
I. C. Wynne et al's (Shell Oil Co., Inc.) No. 1 G. E. Dorsey, M. Sallas Sur., 2½ mi. S of Percilla: E 102 ac. of tr.; 10,000-ft. test. S.D. 6,575 ft.

Hunt County

K. E. Jennings' No. 1 V. T. Banks, J. W. Haynes Sur., 5 mi. NE of Greenville; reinstated to test sec. at 2,114 ft.; P.B. 2,114 ft.; swbd. dry.
Westmount Oil Co.'s No. 1 Clark, W. H. Williams Sur., 1 mi. NW of Celeste. Drlg. 2,000 ft.

Leon County

Lone Star Gasoline Co.'s No. 2 A. Jones, J. M. H. Jones Sur., Buffalo gas area. Loc.

Limestone County

M. Samuel's No. 1 C. Barrow, W. G. McKinsey Sur., 4 mi. NW of Thornton. S.D.; W.O. 6,051 ft.

Navarro County

J. H. Burke's No. 1 fee, Edmonson Sur., 1 mi. N of Powell. Rng. csg. 970 ft.
F. Carter's No. 1 Allen Eden. M. Shire Sur., 2 mi. NE of Angus. S.D. 1,200 ft.

Rusk County

Marietta Corp.'s No. 1 E. B. Alford, Thos. Howeth Sur., 1 mi. S of Pinehill. R.U.
A. O. Whittington's No. 1 Kangerga Bros., Ign. Castro Sur., 9½ mi. N and slightly E of Pirtle. Bldg. drk.

Red River County

Dave Flesch's No. 1 Bailey, J. Robbins

Sur., 1 mi. W of Bagwell. Drlg. 3,181 ft.; T.S. 2,871-97 ft.

Kansas-Oklahoma Pet. Corp. No. 1 R. H. Ringwald, A. Moore Sur., 3 mi. W of Manchester. S.D. 1,000 ft.

Smith County

Shell Oil Co., Inc.'s No. 1 H. Campbell, P. Lively Sur., 1½ mi. N of Chapel; 9,500-ft. test. Loc.

Texas Co.'s No. 1 A. A. Scritchfield, D Page Sur., 2 mi. NW of Bullard. Drlg. 8,038 ft.

Trinity County

Gossage et al's No. 1 First Natl. Bnk., B. F. Wright Sur., S of Trinity. R.U. and S.D.

NORTH TEXAS WILDCATS

Archer County

L. T. Burns' No. 1 J. Penartz, Sec. 19, Clark & Plumb Sur., Blk. 4. Drk.

L. B. Burns' No. 1 H. Wilmut, Lot 13, G.N. Smith Sur., Abst. 393 (4,400-ft. semiwildcat). Drlg. 3,210 ft.

W. B. Hamilton's No. 5 C. E. Graham, J. D. Young Sur. A-1249. 6⅝-in. 5,205 ft.; W.O.C.

Waldo E. Stephens et al's No. 1 Hattie B. Adae, SE part of Blk. 7, Palo Pinto Co. Sch. Lds., 3 mi. SE of Griffin pool. Set 10-in. 100 ft.; drlg. 1,995 ft.

Clay County

L. T. Burns No. 1 J. T. Pickett, W. W Yearly A-745. 6⅝-in. 4,430 ft.; O.S. 4. 430-44 ft.; P.B. 4,380 ft.; drld. out to 4,450 ft.; S.D.O.

Continental Oil Co. et al's No. 1 O. O. Ross, W. Walker Sur. A-703. Set 158 ft. 10-in.; drlg. 4,160 ft.

Frabor-Hodges and Sinclair Prairie Oil Co.'s No. 1 Scaling, G. P. Meade Sur., Abst. 928. R.U.R.

Cooke County

Bridwell Oil Co.'s No. 1 Joe Fisher, SW part of Lot 10, John Barnett Sur., Abst. 42. Drlg. 1,640 ft.

Cottle County

J. E. Burns et al No. 1 J. E. Moss, Sec. 5, Blk. L, A. Forsythe Sur. Jnkd. 225 ft.; skd. 20 ft. S.; drlg. 1,670 ft.

Hardeman County

Carter & Taylor's No. 1 Norton, NW cor. 91-ac. tr. in Blk. 3, Robt. Young Sur., 16 mi. N of Quanah. S.D. 256 ft.

Jack County

Harper Pet. Corp. No. 2 S. V. Vanhooser, Abst. 1926, J. W. Morrow Sur. T.D 2,030 ft.; S.D.O.

Pitzer & West's No. 1 Sloan, Sec. 2786 T.E.&L. Sur. Drlg. 1,640 ft.

Montague County

W. H. Gant and Continental's No. 1 J. L. Brown, Sec. 58, E.T.R.R. Sur. Drlg. 5,990 ft.

Wichita County

Grisso Roy. Co.'s No. 1 Barwise est., T. E.&L. Sur., Sec. 838. Loc.

Wilbarger County

Lawson & Leavall's No. X-1 W. T. Waggoner, NE¼ Sec. 37, Blk. 4, H.&T.C. R.R. Sur. S.S.O. 1,930-33 ft.; 6⅝-in. 1,945 ft.; P.O.P.

Rogers & Cavin No. 1 A. P. Morris, Sec 3, Blk. 14, SW of Harrold. S.D. 2,373 ft.; wtr.

Wise County

W. F. Holifield et al's No. 1 J. Redell, Rebecca Coleman Sur., Abst. 155, 2 mi. E of Bridgeport. Moved off spdr.

C. A. Johnston and others' No. 1 J. C. Vance, Sec. 37, T.&P. Sur. Drlg. 1,313 ft.

H. M. Muse No. 1 F. F. Kaker, Blk. 16. Matagorda Co. Sch. Ld. Pits.

Young County

H. W. Dyer's No. 1 M. G. Cheney, M. L. Terry Sur., Abst. 1261. Loc.

A. T. Strong et al's No. 1 E. C. Stovall, Sec. 2946, T.E.&L. Sur. (4,800-ft. test). Spdg.

Taubert & McKee Drlg. Co.'s No. 1 Shanafelt, P. Pointevent Sur., Abst 1309. 6⅝-in. 4,012 ft.; treating 2,000 gal. acd. 4,437-4,500 ft.; fsg. tbg.

EAST TEXAS

(Border Counties)

Marion County—Other

M. D. Fitzwater No. 1 Mrs. Mary Duncan Jesse Fitzgerald Sur. T.D. 2,558 ft.: swbd. and bailed dry; tstg.

J. D. Reynold's No. 3-B Terry est., 660 ft. EL, 2,250 ft. SL, W. Coore Sur. T.D. 2,025 ft.; S.D.

Sutton et al's No. 1 W. Taylor, 450 ft. EL, midway N and SL, B.B.B.&C.R.R. A-54 Sur. Set 6-in. csg. 2,289 ft.; T.D. 2,313 ft.; pulled lnr.; swbd. dry; S.D.

Marion County—Rodessa

Ark. La. Gas Co.'s No. 2 W. T. Neilson, 1,320 ft. N line, 620 ft. SE line, R. Bennington Sur. Por. L. 5,963 ft.; set 5½-in. csg. 5,983 ft.; T.D. 5,983 ft.; perf. csg. 5,900-44 ft.; wshg. in.

R. W. Cosby's No. 1 Decker, 150 ft. cor. 33-ac. tr. Set 10-in. csg. 100 ft.; S.D. 250 ft.

Gulf Oil Corp.'s No. 3 Ray, 514 ft. NL, 641 ft. EL, 65-ac. tr., J. Hanks Sur. Drlg. anhy. 5,543 ft.

C. H. Lyons' No. 1 Jackson, 473 ft. NL, 460 ft. WL, 20-ac. tr., J. Hanks Sur. Drlg. anhy. 5,395 ft.

J. D. Reynolds' No. 5 Terry est., W. Coore Sur. T.D. 2,359 ft.; W.O.S.R.

Shell Oil Co., Inc.'s No. 3 Whelan, 330 ft. S and W line tr., T. Gillespie Sur. Drlg. L.&sh. 5,490 ft.

Texas Co.'s No. 6 Braden, J. M. Fitzgerald Sur. Set 7-in. csg. 6,011 ft.; T. D. 6,014 ft.; W.O.C.

Shelby County

Natural Gas Dist. Corp.'s No. 1 W. B. Childress, 1,000 ft. W of Redditt & Gray's No. 2 Pickering, W. M. Snider Sur. Set 5-in. csg. 5,080 ft.; T.D. 5,131 ft.; perf. 4,840-60 ft. and 4,874-86 ft.; C.P. 1,800 lb.; T.P. 1,600 lb.; comptng.

W. H. Neel et al's No. 1 J. W. Hanson, C 64-ac. tr., A. Sanford Sur. M.I.M.

WEST CENTRAL TEXAS DISTRICT

Brown County

A. D. Bruce's No. 1 L. S. Mauldin, SW¼ Sec. 15, H.T.&B. Sur., Abst. 464. S.D. O. 1,691 ft.

Kynaston & Cullison's No. 1 L. A. Hill, SW¼ Sec. 35, H.T.&B. Sur. Rng. 8-in. at 1,000 ft.

C. C. Lockwood's No. 1 T. B. Landreth, SE cor. of Subdivision 2, J. Dickinson Sur. 10. S.D.O. 923 ft.; S.S.O. 922-23 ft.

Plains Prod. Co.'s No. 1 Hill, SE cor. W 123 ac. of M. Mudgett Sur. 63. S.D.O. 1,120 ft.

Wilson Oil Co., Inc. No. 1 M. Bowden, Sec. 138, W. E. Gilliland Sur. S.D.O. 2,100 ft.

Callahan County

J. L. Reeves et al's No. 1 P. G. Hatchett, NW¼ Sec. 30, D.&D.A. Sur. S.D.O. 490 ft.

S. B. Roberts' No. 1 Mitchell, SW NE Sec. 28, B.A.L. Sur., outpost to Bowles pool. Drlg. 650 ft.

Coleman County

B. Banner's No. 1 R. R. Powell, NW part of Moses Little Sur. 40. S.D.O. 1,350 ft.

Kynaston-Culberson-Culberson & Bozeman No. 1 J. P. McCord, Sec. 159, J W. Meeks Sur. S.D.O. 2,300 ft.

States Oil Corp.'s No. 1 J. P. Morris, SE part of J. P. Stone Sur. 6. Loc.

Concho County

Natural Resources Corp. No. 1 Armor, Sec. 105, Blk. 72, T.&N.O. Sur. S.D.O. 1,216 ft.

Coryell County

W. E. Crews' No. 1 S. C. Blanchard, W part of Wm. H. King Sur., 2 mi. SW of Mound, 5,000-ft. test. Loc.

Eastland County

Dobbs Oil Corp.'s No. 1 Pierce, 330 ft. SL and 330 ft. EL of 214-ac. tract in Sec. 35, Blk. 2, H.&T.C. Sur. Drlg. 1,200 ft.

R. R. Groce's No. 1 J. M. Rush, Sec. 130 Blk. 3, H.&T.C. Sur. S.D.O. 1,728 ft.

F. S. Holden's No. 1 J. F. Nichols, L. A. McDonals Sur., Abst. 829. S.D.O. 1,005 ft.

Lone Star Gas Co.'s No. 1 F. J. Kimmel Sec. 87, Blk. 4, H.&T.C.R.R. Sur. U.R. 10-in. 2,246 ft.

J. L. Reeves No. 1 J. V. Parker, NW part of Wm. Van Norman Sur. Fsg. 3,077 ft.; S.S.O. 3,019-41 ft.; S.D.O. 3,077 ft.

Erath County

Wayne Chandler's No. 1 Chandler, J W Moore Sur., Abst. 571. Drlg. 5,015 ft.

Fisher County

S. and D. Daube's No. 2 Bennett, NE¼ Sec. 51, Blk. 2, H.&T.C. Sur. Drlg. 2,624 ft.

Hamilton County

Wallace & Vickers' No. 1 C. C. Lund, J P. Bailey Sur. 51. S.D.O. 3,453 ft.

Jones County

Danciger O. & R. Co.'s No. 1 B. P. Davenport, NE¼ Sec. 23, D.D.&A. Sur. Loc.

Healey & Walters' No. 1 Warren, D. P. Rowland Sur. U.R. csg. 2,315 ft.

Moutray-King Oil Co.'s No. 1 J. B. Rutledge, Subd. 33, Sec. 2, Blk. 20. T.&P Sur. S.D.O. 1,937 ft.

Johnson County

Geo. C. Foster's No. 1 Pennington, C W 40 ac. of J. E. Pennington 247-ac. tr., ½ mi. SW of Cleburne; contract depth 3,500 ft. Loc.

Mills County

A. W. Tanner's No. 1 M. J. Ivy, M. Rhyne Sur., 2 mi. SW of Ebony; contract depth 1,450 ft. Loc.

Nolan County

Green & Owens' No. 1 Tipton, Sec. 43 Blk. 19, T.&P. Sur. Sat. from 5,135-38 ft.; 116 B.O. in 2 hrs.; est. 450 B.O P.D.; swbg. and C.O. 5,140 ft.

Plymouth Oil Co. No. 1 F. M. McClure Sec. 49, Blk. 23, T.&P. Sur., 8,000-ft test. Drlg. 4,729 ft.

Stephens County

Geo. E. Fagg No. 1 Richardson, Sec. 8 Blk. 31, S.P.R.R Sur., 4,000-ft. test S.I.; S.O. 3,430-45 ft., T.D.

T. G. Shaw, Tr.'s No. 1 S. P. Stroud NW¼ of G. Newton Sur., Abst. 125 Sd. 2,597-2,600 ft.; swbd. 130 B.O. in 36 hrs.; tstg.

A. G. Swanson No. 1 Veale-Frost, Sec 37, Blk. 8, T.P. Sur. Drlg. 4,350 ft.

Wittmer O. & G. Co.'s No. 2 B. D. Loving, NE¼ Sec. 11, O.A.L. Sur. Loc.

Stonewall County

Shell Oil Co., Inc., No. 1 A. E. Smith, Sec. 143, Blk. 1, H.&T.C. Sur.; 6,000 ft. test. Drlg. 3,133 ft.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ont., Nov. 4.—Crude-oil and naphtha production for all Alberta fields in September totaled 701,209 bbl., compared with 767,984 bbl. in August. The decrease was largely due to lower allowables in Turner Valley.

In September Turner Valley limestone wells produced 668,962 bbl. against 738,174 bbl. in August. Limestone gas wells increased from 4,618 bbl. to 4,895 bbl. and absorption-plant production was up from 20,977 to 23,159 bbl. Shallow crude in Turner Valley dropped from 706 to 692 bbl. Red Coulee light crude was up from 1,052 to 1,066 bbl. and Wainwright heavy crude declined from 1,257 to 850 bbl. Dina heavy crude dropped from 1,200 to 150 bbl., but there was a September production of 205 bbl. from the Moose dome well, and the Terminal well on the Del Bonita structure in southern Alberta was credited with 1,230 bbl. This is a new producer.

Of the absorption plants, British American Oil Co. produced 5,876 bbl.; Gas & Oil Products, 5,207 bbl., and the two Royalite plants had outputs of 6,397 and 5,679 bbl. respectively.

Completions and Tests in Lime

Tested flow of Royalite Oil Co.'s No. 42, LSD 4, Section 32-18-2w5, gave 1,936 bbl. a day through the 1-in. choke, considerably higher than expected. Royalite's No. 42 is just south of British Colonial. Completed at 8,491 ft., it is now awaiting allowable.

In LSD 12, Section 29-18-2w5, Royal Canadian Oil Co.'s No. 3 was allotted an allowable of 678 bbl. a day by the Alberta Conservation Board, bringing it well on among the leading producers although only drilled into the upper porous zone of the lime.

On the central west flank of Turner Valley Argus Royalties' No. 1, LSD 14, Section 25-19-3w5, completed at 7,384 ft., is being acidized. In LSD 11, Section 7-19-2w5, Anglo-Canadian Oil Co.'s No. 8, completed at 7,788 ft., is acidizing. Anglo-Canadian Co.'s No. 8 extends the field ½ mile to the northwest, and is expected to be a large producer.

Drilling in the North

In Section 15-20-3w5 Anglo-Phillips' No. 1, LSD 14, is below 1,449 ft. in the Belly River formation. Royalite Oil Co.'s No. 43, LSD 2, Section 23-20-3w5, is below 8,114 ft., and if it is logging with Home-Millarville's No. 2, which lies 2½ miles north, should get the lime soon. Home-Millarville's No. 2, top ranking well in the Valley, got the lime at 8,032 ft. and was completed at 8,495 ft. Royalite's No. 43 should extend the proven field ¼ mile west on the west flank.

Alberta Oil Incomes' No. 1, LSD 4, Section 34-20-3w5, is below 848 ft. in the upper Benton.

In the Foothills

On the Pouce Coupe structure Guardian Oil Co.'s No. 1, Section 7-80-12w6, is testing at 5,500 ft. In Section 7-43-17w5,

(Continued on Page 95)

CRUDE-OIL PRICES IN REPRESENTATIVE FIELDS

Complete crude-price schedules are now being published in the first issue of each month. The last complete schedule was published in the October 5 issue. All changes in crude-oil price schedules will be published completely in the first issue following the announcement of the changes. Following are representative crude-price schedules in barrels (42 gal.):

East Texas	$1.10
Conroe	1.27
Tepetate, La.	1.03
Smackover, Ark., heavy	.73
Illinois basin	1.05
Pecos County, Tex.	.78
Lance Creek, Wyo.	.77
Bradford, Pa.	2.40

Gravity Schedule

Top prices include all gravities above grades designated and low prices include all gravities below grades designated:

	Signal Hill, Calif.	Oklahoma, Kansas	Gulf Coast Texas
14-14.9	$.80	...	..
15-15.9	.80	...	..
16-16.9	.80	...	..
17-17.9	.80	...	
18-18.9	.80	...	...
19-19.9	.82		$.86
20-20.9	.85	$.70	.88
21-21.9	.88	.72	.90
22-22.9	.92	.74	.92
23-23.9	.95	.76	.94
24-24.9	.99	.78	.96
25-25.9	1.03	.80	.98
26-26.9	1.06	.82	1.00
27-27.9	1.10	.84	1.02
28-28.9	1.14	.86	1.04
29-29.9	1.17	.88	1.06
30-30.9	1.21	.90	1.08
31-31.9		.92	1.10
32-32.9		.94	1.12
33-33.9		.96	1.14
34-34.9		.98	1.16
35-35.9		1.00	1.18
36-36.9		1.02	1.20
37-37.9		1.04	1.22
38-38.9		1.06	1.24
39-39.9		1.08	1.26
40-40.9		1.10	1.28

Crude-Oil Price Changes

Effective November 4, South Penn Oil Co. increased the price of Corning, Ohio, crude 10 cents per barrel to a new price of $1.12 per barrel.

Effective November 1, Simrall Oil Corp. made the price of West Branch, Michigan, crude 85 cents per barrel, a 3-cent increase.

Sun Oil Co. has taken the old Batson, old Hull, Humble, North Dayton, Saratoga, and Sour Lake pools out of its Anahuac graduated price schedule and placed them in the Gulf Coast schedule, which gives each of the fields named a 5-cent increase in price on all grades.

Effect of New Neutrality Law

(Continued from Page 11)

stitution, association, partnership, corporation, or national. The law does not specifically require "cash on the barrel head," but it makes it virtually impossible to collect for exports not fully paid for in advance, whether the commodity is sold to a foreign government or to a private individual or corporation in a belligerent country. An unconditional bill of lading is deemed to constitute a transfer of title, and, in addition, every exporter must file with a collector of customs a declaration under oath that he has no further title or interest in the exported commodity, which is a conclusive estoppel against any claim of any American citizen, and the U. S. Government will not intervene in the case of a loss incurred by a citizen in such a transaction. This title provision does not apply to British and French possessions outside of the North Atlantic zones already defined.

Other provisions of the neutrality law may affect the oil industry to a lesser extent. For example, every tanker or other vessel leaving the United States for a port of a belligerent outside of the North Atlantic zone must file with the port authorities an export declaration describing the cargo and its consignees and stating the intended ports of call. Arming of American merchant vessels is prohibited, and the president is given power to close American ports to armed foreign-flag tankers or other vessels. There are also restrictions on the sailing from American ports of either American or foreign ships for the purpose of supplying fuel or materials to foreign warships or supply vessels.

The export-license-control system, which has been in effect for several years, is continued in substantially the same form. This directs the president to proclaim, on recommendation of the national Munitions Control Board, a list of articles which shall be considered arms, ammunition, and implements of war. All producers, importers, and exporters of such materials are required to register with the secretary of state, and exports and imports may be made only under individual licenses.

President Roosevelt issued a proclamation defining a combat area from which American ships are barred even when destined for neutral ports. The area defined includes all of the British Isles, Baltic Sea, North Sea, south of Bergen, Norway, English Channel, and Bay of Biscay, except Spanish ports west of Bilbao.

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Texas Proration Methods

(Continued from Page 20)

(one well in center of 40 acres) was adopted. In none of the new field rules was the distance from property lines less than 300 ft.

As an incentive to keep the number of wells down while the fields were being developed, in many instances provision was made for the placing of one well in the center of 20 acres, but granting the well an acreage allowable of 40 acres. In some fields the acreage allowable for a well on a 40-acre unit was twice that of a well on a 20-acre unit and, in some, the well received an additional acreage allowable equal to 66⅔ per cent of the acreage allowance allocated a well on a 20-acre tract. (The same plan also was followed in several instances with wells on 10 and 20-acre tracts.) Then in the future, if it was deemed desirable, the field could be drilled down to its ultimate well-spacing pattern. Whether or not this wider-spacing plan is carried out depends largely on the depth of the wells and the field allowable. If the additional allowable gained from maintenance of wider spacing is not sufficiently above the total allowable of two wells on the tract, the operator will, of course, drill down to the ultimate density at this time.

In some fields, mainly in West Texas, "staggered" spacing patterns and patterns allowing for no wells in the center of the tract are used. Value of the staggered spacing in that more uniform development of small tracts is allowed. That of keeping the center of the tract undrilled makes for a gradient in pressure from the high-pressure area in the center to the wells drilled around the edges of the tracts.

One new regulation included in the temporary field rules of two Gulf Coast fields, but not adopted in the final rules, was designed to curtail unnecessary drilling. Difficulty of enforcing the wider-spacing programs now generally provided has been due largely to the fact that in virtually all fields small tracts are found. Under present laws the owner has the right to drill to recover the oil in place beneath his land so that, as a result, many wells are drilled in exception to spacing provided in the field rules.

In an attempt to eliminate these exceptions, it was provided in the temporary rules of the two Gulf Coast fields that before any tract smaller than the accepted unit would be given a permit to drill, the owner of the tract had to show he had made a good-faith effort to pool his tract with that of adjacent landowners. As stated, though, this provision was not included in the final rules. Such a rule has never been tested in the courts, but it is the opinion of some proration experts that the provision would not stand the test of courts. The commission, however, in some instances, has exerted its influence in an effort to have small-tract owners pool their leases with those adjoining in an attempt to cut down unnecessary drilling.

In this regard, the third Court of Civil Appeals at Austin this month, in the case of Dailey v. Railroad Commission of Texas, held that the commission cannot require pooling of tracts where it has no rule prescribing and defining pooling. Thus, right of the owner of a 20-acre tract in the Old Ocean field to drill a well despite the 40-acre spacing rules was upheld, although an offsetting leaseowner had offered to pool the appellant's tract with this acreage. One important statement in the court's opinion was:

"If it be assumed that the conservation laws authorized pooling and that such pooling is not inhibited by the fundamental laws of both the state and the nation, upon which question we do not pass, a complete answer to the pooling contention is that the spacing rule in question does not provide for the pooling of lands, but provides that the commission will, by exception, protect the vested rights of the owner of small tracts. . . . Having promulgated the special spacing rule providing for an exception, the commission cannot refuse to apply that exception where the facts require its application."

While engineers believe it is fundamental that acreage be included in proration plans, in order to discourage unnecessary drilling and drainage across property lines, there is a wide divergence in opinions as to how much weight it should be given. Allocating production on a straight acreage basis can be equitable only when reservoir conditions are uniform throughout a field and each acre is as good as another. Thus, while opinion may vary as to the weight it should be given, Texas operators in general, excepting usually the owners of small leases and royalty owners, are favoring the trend to wider spacing and increased importance of acreage in proration methods. The rapidly increasing number of wells and the downward trend in well allowables leave but little choice.

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Rowan & Nichols Decision Will Be Appealed

NEW ORLEANS, La.—Decision of the federal Circuit Court of Appeals in the Rowan & Nichols Oil Co. suit against the Texas Railroad Commission was announced here affirming a lower court ruling in favor of Rowan & Nichols. The commission will carry the case to the United States Supreme Court.

The company contested the commission's method of proration in East Texas on the ground that it did not consider well density and oil in place, and did not allow the company to recover its fair share of oil. The federal court at San Antonio granted a temporary injunction allowing the company to produce from five wells almost double what it was allowed under the commission's order.

The commission's appeal attacking jurisdiction of the federal court was heard at Atlanta, Ga., October 2. The appellate court held the commission has authority to regulate the development and production, but that it must allow the lease owner to produce a fair share of his oil.

While the order attacked by Rowan & Nichols has been superseded by a new order that to a certain extent takes into consideration acreage, sand thickness and other factors, the state considers the principles involved of sufficient importance for appeal to the highest court. Humble Oil & Refining Co. was granted likewise a temporary injunction against the old order, and an attack on the new proration plan was heard by the federal District Court at San Antonio on October 12. The Rowan & Nichols decision, however, does not control the Humble suit.

One important passage of the court's opinion, read by Circuit Judge Rufus E. Foster, dealt with the commission's policy of not cutting the basic allowable of any East Texas well below 20 bbl. daily if it is capable of producing that amount (basing its action on the marginal-well law). Judge Foster stated:

"There is undisputed evidence tending to show that a pumping well in the field averaging 5 bbl. production a day can be operated with some profit, although the cost of installing pumping apparatus would be about $3,500 a well. It follows that a flowing well producing the same quantity of oil could be operated at a larger profit. Flowing wells producing 20 bbl. of oil a day or less could not be considered as marginal wells coming within the mandatory terms of the statute. The commission is without authority to so class them. It would seem that a more equitable order could be drafted by fixing a lower maximum production for the smaller wells and raising the percentage of potential production allowed. But that is a question to be decided by the commission as to which we express no opinion."

Other important statements from the court's opinion:

"The commission contends that fixing the ratio of production for plaintiff was not within the province of the court. Generally, courts passing upon administrative orders are not authorized to substitute their judgment for that of the authority issuing the order, and must content themselves with enjoining the operation of the order as made. However, there are exceptional cases in which equity and justice require a court to temporarily do so. . . . In this case the commission has no just ground of complaint. The judgment, in effect, restricts plaintiff to the production of 44 bbl. of oil per day per well instead of 22 bbl. allowed by the order. If that were not so, plaintiff would be at liberty, with the order enjoined, to produce its full capacity, which would be unfair to other wells in the field still unrestricted.

"We agree with the District Court that in entering an order prorating the amount of oil allowed to be produced from each well, the commission should take into consideration the amount of oil in place under the lease as well as other relevant factors; and should so administer the order as to allow each lease owner to produce his fair share of oil from the common reservoir. In order to remove any doubt as to the temporary character of the ratio fixed by the District Court, the judgment will be amended to read 'without prejudice to the right of the commission to enter a reasonable proration order and to fairly enforce it'."

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1939 High	1939 Low	Week ended Nov. 4 High	Week ended Nov. 4 Low	Week ended Nov. 4 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1938	Com. sh. earn. 1937	1939 High	1939 Low	1937 High	1937 Low
74½	50	67½	65	65¼	Amerada Corp.	788,675	N.P.	50cQ	10-31-39	$2.00	$2.07	$3.04	78	55	111⅞	51½
24⅞	18⅛	24½	23¾	24	Atlantic Refining	2,663,999	$25	25cQ	12-15-39	1.00	1.40	3.51	27⅝	17¾	37	18
21½	10¼	18	17½	17⅞	Barber Asphalt Co.	390,223	$10	75c	12-16-37	....	—.85	1.91	23¾	12¼	43⅜	10⅛
19½	11⅛	15⅛	14½	15	Barnsdall Oil Co.	2,250,344	$5	15c	12-9-39	1.00	1.26	.85	21⅜	10⅛	35¼	10
9⅝	6½	8⅜	8	8	Consolidated Oil Corp.	13,751,846	N.P.	20cQ	11-15-39	.80	.55	1.48	10¾	7	17⅞	7
31½	19⅞	27⅝	26	27	Continental Oil of Delaware	4,682,581	$5	25cQ	9-28-39	‖1.00	1.10	2.98	35¾	21¼	49	24
9⅜	4½	7½	7¼	7½	Houston Oil (new)	1,098,618	$25	...	10-17-30	....	.83	.94	9¾	5	17⅝	4¾
20¼	10	15¼	14¾	14¾	Lion Oil Refining	435,815	N.P.	25cQ	10-10-39	1.00	2.09	2.17	25¼	15⅝	34	12½
18	11⅛	17	15¾	16¼	Mid-Continent Petroleum	1,857,912	$10	35c	12-1-39	.60	.56	2.86	22⅝	12¼	35⅜	14
14⅞	8¾	11¼	10⅞	11⅛	Mission Corporation	1,379,245	$10	25c	6-29-39	1.00	1.04	1.31	17⅜	10⅝	34	15
15½	5⅝	11⅜	10⅝	10⅜	National Supply	1,155,517	$10	....	12-22-37	....	—.79	4.90	23	12½	41⅜	17⅝
10½	6	8⅜	7⅞	8⅛	Ohio Oil Co.	6,563,377	N.P.	20c	12-15-38	.20	.25	1.30	14⅞	8⅞	22⅞	8
11⅞	7⅜	8¾	8½	8½	Pacific Western Oil	1 000,000	N.P.	50c	12-20-38	.50	1.22	1.39	15⅞	10¼	29¾	11⅜
8¾	5	7	7	7	Pan American Pet. & Trans.	4,702,945	$5	....	12-21-37	....	.08	1.18	9¼	6¼	17⅛	7
46½	31¼	43⅞	42¾	43½	Phillips Petroleum	4,449,052	N.P.	50cQ	12-1-39	‖2.00	2.03	5.42	44⅜	27¼	64	30½
24	17⅛	22⅞	22⅛	22½	Plymouth Oil Co.	1,006,200	$5	35cQ‡	12-31-39	1.40	2.59	2.85	25⅝	15	29⅞	13
11¾	6⅛	9¼	8½	8⅝	Pure Oil Co.	3,982,031	N.P.	25c	12-1-37	.	.38	2.15	13½	8¼	24⅜	8⅜
10¼	6⅝	9⅝	8¼	9⅜	Richfield Oil Corp.	4,010,000	N.P.	50c	12-21-38	.50	.51	.35	9⅞	5	6½	4½
24⅜	15½	21½	20⅝	21¼	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	12-15-39	1.00	1.52	1.97	27½	15½	54⅛	16
17¼	9⅞	15	13¾	14½	Shell Union Oil	13,070,625	N.P.	25c	7-20-39	.70	.72	1.44	18⅝	10	34⅜	14⅞
29½	15½	22½	21⅝	22¼	Skelly Oil	995,349	$15	50c	11-15-39	1.00	2.27	6.07	34⅜	18½	60⅝	26½
15⅛	10¼	14	13½	13½	Socony-Vacuum	31,206,071	$15	25cSA	9-15-39	.50	1.29	1.82	16⅜	10⅜	23¼	13
33⅝	24¼	28⅜	27½	28⅛	Standard Oil of California	13,004,153	N.P.	25cQ	12-15-39	1.40	2.22	3.17	34⅞	25⅛	50	27⅛
30	22⅜	27⅞	26½	27⅝	Standard Oil (Indiana)	15,272,020	$25	50c†	12-15-39	1.00	1.82	3.66	35½	24⅜	50	26½
53½	38	48⅞	46⅝	48¼	Standard Oil of New Jersey	26,618,065	$25	75c¶	12-15-39	§1.50	2.86	5.64	58⅜	39¾	76	42
66	45⅜	60	58	60	Sun Oil	2,316,484	N.P.	25cQ	12-15-39	1.00	1.07	3.86	65⅛	45	77½	44½
3⅝	1⅜	2⅞	2⅝	2⅞	Superior Oil Corp.	1,388,979	$1	10c	12-28-38	.10	.24	.32	4¼	1⅜	7⅜	1½
50⅝	32½	48⅛	46½	47⅞	Texas Corp.	10,876,882	$25	50cQ	10-2-39	2.00	2.13	5.02	49⅝	32⅝	65⅛	34⅜
5⅜	3¼	4⅜	4½	4⅝	Texas Gulf Producing Co.	888,144	N.P.	10c	12-15-39	.15	.86	.68	5⅞	2⅝	9⅝	2
11⅜	7	9⅜	9⅛	9⅜	Texas Pacific Coal & Oil	888,236	$10	10c	12-1-39	.40	1.16	1.11	12½	7	16⅝	5⅜
14¼	9½	12¼	11⅜	12	Tide Water Associated	6,375,253	$10	15c	12-1-39	1.00	1.28	2.08	15⅜	10⅛	21⅝	13⅛
19⅜	15⅛	17	16½	16⅜	Union Oil of California	4,666,270	$25	25c	11-10-39	1.20	1.47	2.58	22⅛	17⅛	28⅛	17½
24¼	20⅛	24	23	23½	Union Tank Car Co.	1,177,381	N.P.	30cQ	9-1-39	1.30	1.16	1.70	23½	20	31½	22
4¼	2⅜	4¼	3⅝	4	Wilcox Oil & Gas	487,568	$5	....	5-10-28	.	.52	.24	3½	1⅝	6¼	1⅜

†Includes extras. ‡Also 2 per cent in stock. §Also 1⅛ per cent stock dividend. ‖Also right to subscribe to bonds. ¶Also 1½ per cent in stock. —Deficit.

New York Curb Exchange

1939 High	1939 Low	Week ended Nov. 4 High	Week ended Nov. 4 Low	Week ended Nov. 4 Close	Stocks—	Total shares Outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1938	Com. sh. earn. 1937	1939 High	1939 Low	1937 High	1937 Low
11¾	5½	7½	7⅛	7¼	American Republics Corp.	1,308,049	$10	10c	7-11-38	$0.10	—$0.22	$0.27	11¾	5	10	6¾
7⅛	2½	3⅞	3¾	3⅞	Bridgeport Machine Co.	270,000	N.P.	$1.25	12-30-37	....	—.14	1.90	10¼	4⅞	21⅜	7
34⅜	26½	30	28½	30	Buckeye Pipe Line Co.	200,000	$50	$1	12-15-39	2.00	2.36	4.02	39	22½	51½	36
130	110	..	..	..	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-25-39	6.50	5.32	6.73	128	97	112	95½
9¼	4½	6	5¾	5⅞	Cities Service (new)	3,704,067	$10	....	6-1-32	....	.23	1.02	11	5⅛	5⅜	1½
2¼	½	1⅞	1⅝	1⅞	Cosden Petroleum	462,551	$1	....	..	....	....	.19	2⅜	⅞	5½	1½
28	16¾	25¼	24½	25¼	Creole Petroleum	6,975,383	$5	50cSA†	12-15-39	1.00	1.64	1.61	27½	17½	38¾	20¼
7⅛	3⅝	5	5	5	Darby Petroleum	351,390	$5	25cSA	1-15-39	.50	....	1.36	10¼	5½	18⅝	6½
2⅝	1½	2⅜	2⅜	2⅜	Derby Oil & Refining	263,162	N.P.	....	.....	..	—.91	1.34	3½	1½	8⅜	2¼
22	15⅛	22	22	22	Eureka Pipe Line	50,000	$50	50c	11-1-39	3.00	—.37	—.12	31	16	47½	24½
45½	29¼	44⅛	42	42¼	Gulf Oil Corp.	9,076,202	$25	25cQ	10-1-39	1.00	1.43	3.51	46⅞	33	63½	33
71	52½	68½	67¾	68¼	Humble Oil & Refining	8,987,840	N.P.	62½c	10-2-39	3.00	3.98	5.22	72⅝	56	87	54⅞
17	11⅜	15	14⅜	14⅞	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	6-1-39	1.25	.96	.98	19½	14⅛	24¼	14½
7	5⅝	6	6	6	Indiana Pipe Line	300,000	$10	20c	11-15-39	.50	.47	1.03	9⅜	6	15	5⅞
27½	17½	22½	21⅝	22½	International Petroleum	14,324,088	N.P.	1.00†‡	6-1-39	2.50	1.98	....	31¼	21	39½	23½
3¾	2⅛	2½	2⅜	2⅜	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	.10	.14	.17	5	2⅛	8⅜	2⅝
9⅞	7⅛	9⅞	9½	9⅞	Lone Star Gas	5,553,747	N.P.	20c	8-21-39	.60	.88	1.14	10⅜	6⅝	14¼	5¼
7¾	4	5½	5⅜	5⅜	Louisiana Land & Exp.	2,977,449	$1	10cQ	9-15-39	.45	.45	.58	9⅜	6½	15¼	6⅜
17	14½	..	..	..	Margay Oil Corp.	149,943	N.P.	25cQ	10-10-39	1.00	2.28	3.26	24	16	33½	17
8¾	6⅝	7⅞	7¾	7⅞	Midwest Oil Co.	998,474	$10	45c	6-15-39	1.00	.93	1.14	9⅝	6⅝	14⅝	6¼
5⅞	4⅞	5¾	5⅝	5⅝	Mountain Producers	1,593,584	$10	30cSA	6-15-39	.60	.62	.76	5⅜	4½	7⅞	4⅛
14	11¼	13½	12⅜	13½	National Fuel Gas	3,810,183	N.P.	25cQ	10-16-39	1.00	.84	.96	14⅝	11½	19½	12
9¼	7¼	9¼	8¾	9¼	National Transit	509,000	$12.50	35c	6-15-39	.75	.88	1.19	9¼	6½	12½	7¼
1⅜	1½	1⅝	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	..	.02	.02	2⅝	1½	5	1⅜
4⅞	4	..	..	..	New York Transit	100,000	$5	25c	10-14-39	.25	.16	.49	4½	3½	5⅜	3⅞
6	4½	5½	5⅜	5½	Northern Pipe Line	120,000	$10	15c	12-1-39	.35	.24	.78	6	4	12⅜	5⅜
7⅝	4	5¼	5⅛	5⅛	Pantepec Oil	2,857,000	$1	....	.....	....	....	....	7⅜	3½	9⅝	2⅜
5	1¼	5	3⅛	3⅝	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.17	—.17	4½	1⅝	12⅜	2
3	1⅞	..	..	..	Ryan Consolidated	298,931	N.P.	....	.....	.	.29	.46	4	2⅛	6½	2¼
4⅞	3½	..	..	..	Southern Pipe Line	100,000	$10	15cSA	9-1-39	.30	—.27	.85	5⅜	3¼	7¼	3⅞
39½	26¾	37	36¾	36¾	South Penn Oil	1,000,000	$25	37½cQ	9-29-39	1.75	1.44	4.64	39	28¾	56	35
23	18	22	20	20	Southwest Penna. Pipe Lines	35,000	$50	50cQ	10-2-39	2.00	—.41	.95	22¼	16½	42	20
19¼	17¼	19⅛	18¾	19¼	Standard Oil of Kentucky	2,604,790	$10	25c	9-15-39	1.25	1.45	1.60	18⅜	15	21⅛	14¾
26¾	17	26	25	26	Standard Oil of Ohio	753,740	$25	25c	9-15-39	1.00	1.81	3.67	22⅝	16¼	45	16
2¾	1¾	2⅛	2	2⅛	Sunray Oil	2,007,076	$1	5c	4-27-39	.05	.23	.42	3¼	2	4⅞	2
4	2⅝	3	2⅞	2⅞	Texon Oil & Land	936,024	$2	10c	6-30-39	.60	.56	.51	5¼	3½	7⅝	2
6	2½	3½	3¼	3¼	Transwestern Oil Co.	750,000	$10	....	.....	....	—.12	.48	7⅝	4¼	13⅞	4⅝
3⅜	1⅝	2⅝	2⅜	2½	United Gas Corp.	7,818,959	$1	....	.....	....	—.51	.25	5¼	2⅝	13⅞	3

†Includes extras. ‡Payable in Canadian funds. —Deficit.

Personal Paragraphs

C. M. SHULL, superintendent of the southern division of Texas Pipe Line Co. of Oklahoma, ended more than 32 years of service with the company last week when he retired on reaching the retirement age of 65. He began as a ditch digger.

ROY E. AYERS, governor of Montana, has appointed as members of the Oil Conservation Board of the State of Montana to serve until January 8, 1940: L. B. O'NEIL, Cut Bank; WILFRED F. NADEAU, Cut Bank; W. E. RICE, Great Falls; GEORGE R. DOWNS, Shelby; and TOM STOUT, of Lewistown. At a meeting at Cut Bank Mr. O'Neil was chosen chairman; Mr. Rice, vice chairman; and R. P. JACKSON, Great Falls, secretary.

U. G. TUTTLE, general sales manager of Cities Service Oil Co., spent several days in Tulsa recently.

W. R. THAWLEY, manager of scouting for Gulf Oil Corp., Tulsa, has returned from a vacation near Washington, D. C.

J. H. (JACK) WOLFE, purchasing agent British American Oil Producing Co., Tulsa, has been appointed a member of the A.P.I. Mid-Continent subcommittee on belting.

ROLAND S. BOND, Dallas, Tex., independent operator, and GUY I. WARREN, independent operator of Corpus Christi, Tex., have organized the Hi-Speed Drill Manufacturing Co. of Dallas and Corpus Christi. LANHAM CROLEY, Dallas, is the firm's attorney.

B. T. McNEIL, marketer of crude and petroleum products, Houston, Tex., was the guest speaker at a largely attended meeting of the Houston, Tex., Geological Society. He discussed "Marketing of Crude Oil in Bulk Cargoes for Coastwise and Export Shipment."

A. C. RUBEL, vice president of Union Oil Co. in charge of drilling and producing activities, was presented to members of the Los Angeles Petroleum Accountants Society by R. W. McCUTCHEON of West Coast Refining Co. and L. A. WILLIFORD of Macmillan Petroleum Corp. at the monthly meeting of the society and discussed "Production and Development Accounting From the Manager's Viewpoint."

J. GUS PATTON, chief engineer, Indian Territory Illuminating Oil Co., who had been critically ill in an Oklahoma City hospital since June 2, has returned to his home in Tulsa.

DR. GARRETT KEMP, geologist and engineer of Dallas, Tex., and for 13 years consultant to the departments of geology and engineering of the Atlantic Refining Co., has been appointed as consultant to the school of engineering at Texas A. and M. College. Dr. Kemp has long been active in educational work, having been a member of the faculty at Purdue University, University of Illinois, University of Arkansas, University of Kentucky and Oklahoma A. & M. College. He is a fellow in the American Association for the Advancement of Science.

DR. GEORGE B. SOMERS, seismic engineer, Dallas, Tex., and formerly in charge of a seismograph crew for Socony-Vacuum in Germany, delivered an address on political and industrial conditions in Germany before the Magnolia Petroleum Co. Young Men's Club Monday evening at a dinner at the Italian Village in Dallas.

JOHN D. ROCKEFELLER, speaking at the completion of Rockefeller Center, said: "The business men of this country want peace—peace among themselves, peace with government, peace with labor. The earnest desire of the great majority of business men is that this country shall keep out of war. We should, as a people, free ourselves forthwith from any legislative enactments that may prevent our freedom of action in connection with whatever international situations may arise."

J. EARLE BROWN, president of the Fort Worth Geological Society, Fort Worth, Tex., has announced that the organization, together with the West Texas Geological Society, will sponsor a 2-day field trip into the Brady-Menard central mineral uplift region November 11 and 12. After spending November 11 inspecting the area between the region and Austin, the group will gather at that city for a lecture in the evening by DR. E. MELTON, University of Oklahoma, on the practical application of aerial photography to geological problems. Sunday's program will include a study of the Menard region.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

In the Cushing field in Oklahoma 378 wells are producing 153,475 bbl. per day. The White & Sinclair interests lead with 24,050 bbl. from 66 wells. The same interests have the largest tank farm in the field and 3,337,750 bbl. of crude in storage.

A driller working in upper Burma writes home that oil wells there start with a production of from 100 to 6,000 bbl. per day, flowing, but that they soon drop off to pumpers of from 10 to 15 bbl. per day.

20 YEARS AGO

John D. Rockefeller adds $10,000,000 to his endowment of the Rockefeller Institute for Medical Research.

Pennsylvania Grade crude oil is advanced in price to $4.50 per barrel.

Imperial Oil, Ltd., (Standard Oil Co. of New Jersey) has subscribed for $3,000,000 of Canadian victory-loan bonds.

David J. Kelley, president of Manhattan Oil Co., died in New York following an operation for appendicitis.

Donald Oaks, Tulsa oil man, and Miss Louise Argue of Independence, Kans., were united in marriage in the latter named city.

10 YEARS AGO

Unit operation of oil pools is being seriously discussed by producers and petroleum economists.

The first long-distance movement of gasoline through a pipe line will be made by Standard Oil Co. of New Jersey through the Tuscarora pipe line from Baytown, N. J., to western Pennsylvania.

Sunray Oil Co. purchases a controlling interest in Homaokla Oil Co. which has 125 oil wells and 2,300 bbl. a day production.

PAUL S. ACHE, independent operator, has returned to Tulsa after an extended stay in Wyoming.

WILLIAM WALLACE BRUCE, vice president of Continental Oil Co., and MISS CLEO JONES, both of Ponca City, Okla., were married at Portsmouth, Va., November 2.

GEORGE W. REED has been in charge of exploration just completed in the Bay St. Louis area of Mississippi Sound, for Seismograph Service Corp. of Tulsa, with headquarters at Biloxi.

G. A. (JERRY) SADLER, member of the Texas Railroad Commission, who would not be without his tin of snuff, said he offered President Roosevelt a pinch when visiting the White House but the president told him he never dipped snuff so soon before lunch.

STUART E. BUCKLEY, Humble Oil & Refining Co., Houston, Tex., addressed members of the Ark-La-Tex chapter of the A.P.I. last week on the subject "Gas-Distillate Reservoirs." WILLIAM E. SCHOENECK of the Ohio Oil Co., Shreveport, La., gave a report on experimental work done on recycling at Cotton Valley.

WILLIAM (BILL) KECK, president of Superior Oil Co.; GENE STARR, president of Universal Consolidated Oil Co.; GEORGE L. MACHRIS, president of Wilshire Oil Co., and C. B. COLBY, president of Caminol Co., Ltd., were the largest contributors to the campaign to prevent adoption of the Atkinson oil bill in California.

ALFRED C. GLASSELL, JR., independent operator of Lafayette, La., left last week for an extended vacation trip on the West Coast.

GEORGE D. STEVENS and W. J. GOLDSTON, of Goldston & Stevens, independent operators of Houston, Tex., attended the Rice-Fordham football game at New York last week.

GRAYSON RAY, scout for Magnolia Petroleum Co., at Wichita Falls, Tex., spent several days visiting in the home office at Dallas last week as he returned from a vacation on the Gulf Coast.

PAUL WEAVER, of the Gulf Oil Corp., Houston, Tex., addressed members of the Shreveport Geological Society on the subject "Ground Water and Its Geological Interpretation" at the November meeting.

DR. L. W. BLAU, in charge of the geophysical department of Humble Oil & Refining Co. at Houston, Tex., presided at the oil-production session of the technical meeting of the American Institute of Physics in New York last week.

P. M. (PETE) MARTIN, of Continental Oil Co., has been elected president of the North Texas Geological Society. PAT PATTERSON, of Cities Service Oil Co., was chosen vice president, and R. E. McFALL, of Phillips Petroleum Co., secretary-treasurer.

R. L. DENTON, scout for the Magnolia Pipe Line Co. at Kilgore, Tex., was named secretary of the National Oil Scouts and Land Men's Association at a special meeting at Corpus Christi. Mr. Denton succeeds G. R. KENNEDY, formerly pipe-line scout for Magnolia Pipe Line Co., who has resigned to enter into the oil business for himself.

Pipefitter 'n Everything

George Armistead, who has been made assistant to D. W. Hovey, vice president and general manager of Republic Oil Refining Co., Houston, Tex., was a variety of things in his first refinery job after graduating in 1923 from Texas A. and M. College. Fitted out with a degree of bachelor of science in chemical engineering, he went to work in the Port Arthur, Tex., plant of Texas Co. He had a feeling at first that they were less interested in his B.S. than in his ability to make himself useful. He was a pipefitter, an assistant still foreman, a research chemist, a research supervisor, and so on. Then he was transferred to the companys' Lockport, Ill., refinery, where he served as assistant cracking-still foreman and later as technical assistant.

GEORGE ARMISTEAD

In 1932 Mr. Armistead joined the staff of Gasoline Products Co., Inc., New York, as process engineer, afterward taking a similar post with Process Management Co. Here he became secretary of the Cracking Development Conference, an organization composed of representatives of Standard Oil Co. (Indiana), Texas Co., Standard Oil Co. of New Jersey, and M. W. Kellogg Co., whose purpose was to correlate research work. He was actively interested in cracking-plant safety from the standpoints of both design and operation. He resigned his post with Process Management to join Republic, and he has moved his family from New York to Houston. The change in positions takes Mr. Armistead back to the city of his birth.

WILLIAM B. WAY, Tulsa, general manager of the International Petroleum Exposition, was called to Coraopolis, Pa., Friday by the unexpected death of his father, W. H. Way, 87.

J. E. WHEATLEY, district superintendent, Humble Oil & Refining Co., at Hastings, Brazoria County, Texas, has been transferred to the new Lovell's Lake area in Jefferson County.

ROY V. CLARK, of Shell Oil Co., Inc., for some time knock tester in the motor laboratory at Martinez, Calif., refinery, has been promoted to head inspector of the laboratory at Martinez.

DR. PER K. FROLICH, director of the research chemical laboratories of Standard Oil Development Co., has been nominated for president of the American Chemical Society, and also for member of the board of councillors at large.

J. T. DURKEE, assistant comptroller and assistant treasurer of General Petroleum Corp. at Los Angeles, Calif., and a graduate of Dartmouth University in 1917, has just completed 20 years of uninterrupted service with the company.

T. V. MOORE, research engineer, Humble Oil & Refining Co., Houston, Tex., and Mrs. Moore, have left for a short visit in Kentucky on their way to Chicago, where Mr. Moore will attend the annual meeting of the American Petroleum Institute.

W. W. ROBINSON, of Texas Co., with offices in Los Angeles, Calif., chairman of the Technical Committee of the California Natural Gasoline Association, will be chairman of technical sessions of the association at the annual fall meeting to be held at the Ambassador Hotel in Los Angeles, November 17.

W. P. DICKSON, formerly accountant in the district office of the Texas Railroad Commission at Midland, Tex., has resigned to become chief clerk with Aloco Oil Co., Denver City, West Texas.

Shifts: FOREST W. HOOD, geologist Carter Oil Co., from El Reno, Okla., to Jackson, Miss.; J. D. TURNER, geologist Carter Oil Co., from Mobridge, S. D., to Chamberlain, S. D.; FRANCIS G. PHILLIPS, engineer Shell Oil Co., Inc., from Iowa, La., to Donaldsonville, La.; J. B. BURNETT, land and lease department Vacuum Oil Co. Pty. Ltd., from Melbourne, Australia, to Coachella, Calif.; ROBERT T. WILSON, vice president Shamrock Oil & Gas Corp., from Amarillo, Tex., to Corpus Christi, Tex.; GUY MABEE, J. E. Mabee Drilling Co., from Effingham, Ill., to Mount Carmel, Ill.; LOWELL L. SPARLING, president Southern Illinois Petroleum Co., from Fairfield, Ill., to Olney, Ill.; HENRY CARTER REA, geologist Shell Oil Co., Inc., from Evansville, Ind., to Dallas, Tex.; EDWIN MEREDITH, manager Meredith Oil Co., from Saginaw, Mich., to Grand Rapids, Mich.; JAMES B. SIMPSON, superintendent Waggoner Refining Co., from Ardmore, Okla., to Levelland, Tex.; J. F. SNYDER, manager land and lease department, Sinclair Prairie Oil Co., from Tulsa to Jackson, Miss.; R. A. LeMAY, manager Independent Exploration Co., from Tulsa to Fort Worth, Tex.

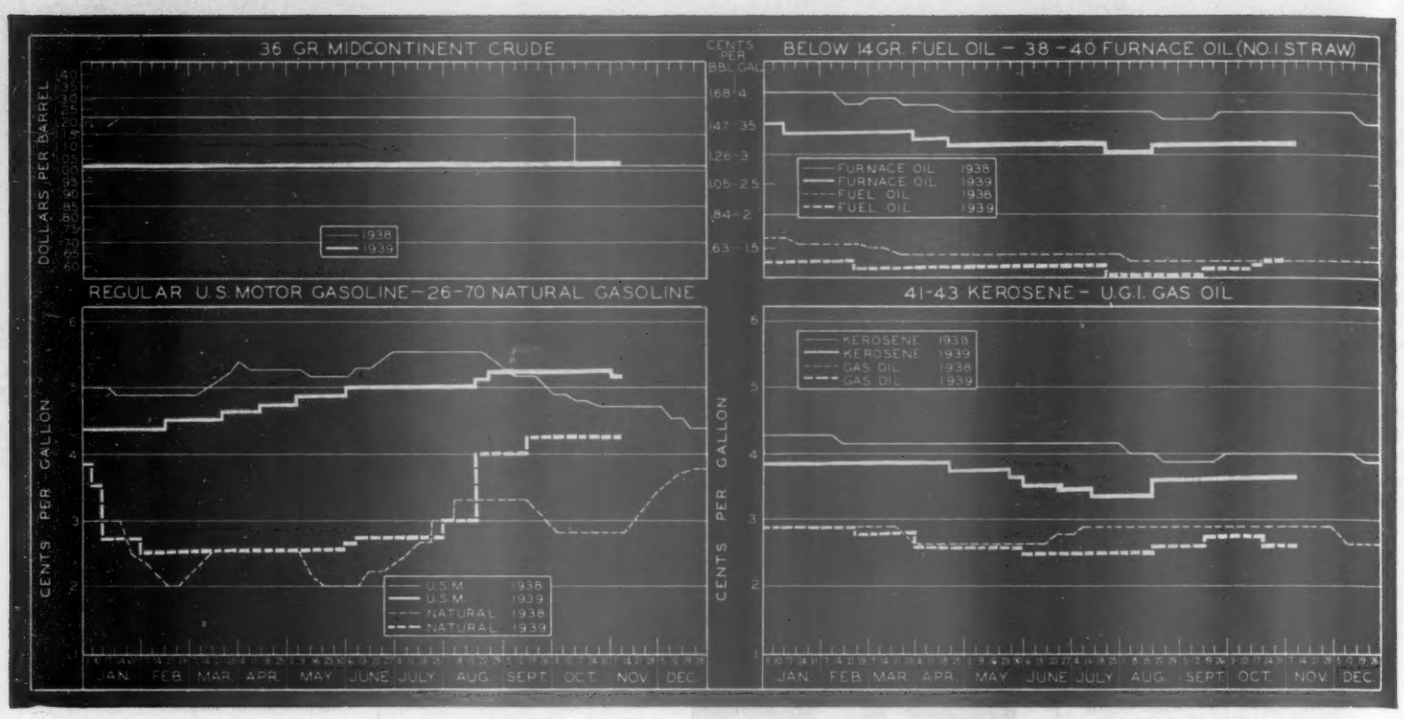
T. VAN HASSELT sailed from New York last week for Venezuela where he will join the executive personnel of the Shell companies in Caracas. Mr. Van Hasselt was stationed in Venezuela for several years before filling administrative positions with other Shell operating subsidiaries in the Netherlands East Indies and in Mexico.

DR. GRAHAM EDGAR, vice president and director of research of the Ethyl Gasoline Corp., will be the speaker at the annual dinner of the Institute of Petroleum, Stevens Hotel, Chicago, on November 15. Dr. Edgar will discuss the present status of the tetraethyl-lead industry and future trends which may be expected in gasoline antiknock quality and automotive engine design as indicated by present trends and by some of the research data now available. Dr. Gustav Egloff, director of research of Universal Oil Products Co., will be chairman of the meeting. Cary Wagner, Pure Oil Co., is secretary.

RHEA J. SMITH, formerly with Standard Oil Co. of Louisiana, will head the office which the Carter Oil Co. has opened at Jackson, Miss. With him will be associated DAVID HARRELL, geologist, formerly in the Illinois division, and H. L. FRANCIS, scout, formerly at St. Joseph, Mo.

EDWIN B. COX, of Cox & Hamon, Dallas, Tex., has been elected chairman of American Petroleum Institute regional public relations committee No. 5, comprising the State of Texas. Other new officers elected are: J. SAYLES LEACH, Texas Co., Houston, vice chairman; and CHASE E. SUTTON, Pure Oil Co., Houston, secretary. Region No. 5 has a membership of 54 oil-industry representatives, the largest of all regional public relations committees.

CLYDE W. SMITH, manager of safety, Standard Oil Co. (Indiana), was awarded a gold watch at the petroleum section luncheon, National Safety Congress, at Atlantic City, N. J., last month. The presentation was the first ever made by the petroleum section to an individual. It was made in token of Mr. Smith's outstanding service in accident prevention.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Group 3 Gasoline Market Less Robust but Other Products Gain Strength

By T. F. SMILEY

THE Group 3 gasoline market, which had been trying to make itself believe there was nothing wrong with it, had to own up this week that it wasn't feeling well. Substantial quantities looking around for a place to go afforded evidence of a lowered state of health. Lubricating oils and wax were manifesting new strength. Natural gasoline was keeping on its feet, but seemed a little tired. Heating oils were looking up.

Uneasiness in the gasoline market, increasingly noticeable during the past month, assumed concrete form when various refiners resorted to price-cutting as a means of starting slow-moving stocks on their way. Not only Oklahoma, but North Louisiana, East Texas, North Texas, and West Texas, had material that wanted a home. In Oklahoma all grades were obtainable for an eighth cent less than the prices that had ruled a week earlier, and according to reports the buyer looking for a quarter cent off didn't have to strain his eyes.

Disturbing Influences

Among disturbing influences in the gasoline market was a growing realization that even correction of the dislocated export business which has created congestion at Gulf ports would not assure the Mid-Continent refiner additional outlets. To begin with, there is already at Gulf Coast refineries and terminals all the gasoline likely to be asked for by warring nations for an indefinite length of time. If these supplies showed indications of running low, refining operations could be stepped up, thus putting off the day when Mid-Continent refiners might expect to be called on.

Then too before refiners in interior regions could hope to participate directly in oversea business the supplies available in East Texas, North Louisiana, and Arkansas would have to be pretty well depleted, for those areas enjoy more favorable freight rates to the Gulf than does the Mid-Continent. However, this last contingency would be of appreciable benefit to refiners farther north, for it would reduce the volume of competitive material entering their markets.

So, with war conditions bearing a rather remote relationship to gasoline sales of the Mid-Continent refiner, the nation's mounting stocks, along with excessive runs to stills and seasonal decline in demand, are bound to cause a problem of increasing gravity unless a sharp rise in demand, not now in sight, develops soon.

In contrast with finished motor fuel, natural gasoline from the Mid-Continent has been benefiting directly from both actual and potential export demand. Large orders from Gulf Coast refiners were booked in the past week. This material, for November delivery, will be used in the manufacture of gasoline ordered by European buyers. A few tankers in the trans-Atlantic trade were reported to have arrived at Gulf ports recently, and it was supposed they would leave with oil cargoes before long. In the meantime, retarded export movement has softened the natural-gasoline market. Belief is general that a convoy system of ocean transportation will be in operation soon.

Lubricating Oils Up

Neutrals and bright stocks underwent another rise of a cent. The European demand for bright stocks was reported to be beyond the manufacturing capacity of United States refineries.

White crude wax was bringing 6¼ cents, a price not attained before since the boom days following in the World War.

Heating oils, which had been moving rather sluggishly because of unusual prolongation of warm weather, were more active in the past week, jobber buying showing increased life as cold waves started the oil burners going. Kerosene too was in somewhat brisker demand. Heavy industrial fuel continued to gain.

Refined Oil Market Barometer

Accumulations of gasoline causing softer market in most areas. War requirements not yet making important drafts on stocks. Effect of curtailed ocean shipping on heavy fuel-oil market not clear, but some observers predict demand will hold up and perhaps even increase. Export orders for wax continue heavy. Cold weather is stimulating consumption of furnace oils.

MID-CONTINENT. Gasoline soft. Lubricants and wax vigorous. Heating oils stronger.

EAST COAST. Gasoline draggy. Domestic heating oils active. Heavy fuels holding ground.

GULF COAST. Gasoline steadier. Kerosene, gas oil, and fuel oils strong. Lubes tightening.

CALIFORNIA. Export gasoline prices higher. Little change in rest of market.

PENNSYLVANIA. Bright and steam-refined stocks up. Gasoline easy. Wax strong.

CHICAGO. Gasoline slow. Heating oils gaining strength. Heavy industrial oil firm.

Demand for Heating Oils Is Up; East Coast Gasoline Softens

By H. STANLEY NORMAN

NEW YORK, Nov. 6.—Improved demand for domestic heating oils featured last week's market activity in the northeastern section of the country. Tone of the motor-fuel market softened slightly last week in sympathy with Gulf Coast conditions. Reports were current that 65-octane motor fuel could be obtained in some directions at 6⅝ cents, although a majority of sellers said they were quoting 6¾ cents, and a few were asking 7 cents in the tank-car market.

Although delivery instructions on domestic burning oils were approaching winter proportions, the No. 2 fuel-oil market remained unchanged at a range of 4.6 to 5 cents per gallon along the northeastern coast. Kerosene was reported moving more freely at a range of 5 to 5½ cents. There was a tendency for sellers to move toward the high side of the range, but there is still an important volume of business at the low, or at least on the down side, of the price spread.

The substantial upturn in motor-fuel stocks, despite a cutback in refinery throughput, focused interest on action of this market for the immediate future. Unless unpredictable buying on the part of exporters develops, the gasoline market appears headed for lower ground, although sellers are resisting and are reluctant to relinquish gains made possible by the August production shutdown and greater industrial activity.

Residual grades of fuel oil are holding their market position without particular difficulty, although curtailment of marine activity is expected to bring a temporary pressure on current prices. All sellers along the North Atlantic Coast are quoting $1.15 per barrel for Bunker C fuel oil, and the top contract price for the first half of 1940 business is $1.35 per barrel. The tank-wagon market for No. 6 fuel oil is firmly established at 3½ cents per gallon in New York and vicinity.

Wax continued to feature the minor products. Some suppliers in Pennsylvania advanced their prices a half cent on scale wax to 6 cents for 124-126 and 122-124 A.m.p. Demand continues to run ahead of supplies, and most refiners are unable to quote on more than a part of the inquiries reaching their offices.

Pennsylvania lubricating oils were unchanged last week. Industrial demand remains brisk, and practically all refiners are restricting sales in an effort to supply all customers. Last week's crude-price advance in Pennsylvania is not expected to register immediately in lubricating-oil prices. Most refiners in that section reported improved demand for fuel oil at firm to stronger prices, which will help absorb the higher cost of crude. Prices quoted on 200-viscosity neutral range up to 32 cents per gallon, while 28 cents is the high on 150-viscosity material, 25 pour test. Cylinder stocks are unchanged in prices, but refiners are limiting sales to regular customers.

Tanker rates have regained part of the 2 to 3-cent drop of 2 weeks ago, and vessels are difficult to locate for unrestricted voyages. The chartering activity did not appear quite as brisk last week as at the time a few boats were available at reduced rates. Movement of tankers, however, is extremely difficult to check under existing conditions, and no information whatever is given on boats moving in trans-Atlantic commerce. A boat was chartered last week for loading at Aruba and delivery in Italy at $8.50 per ton. Most of the coastwise fixtures are being made currently at a range of 31 to 32 cents per barrel. At least three vessels were chartered last week for service between the Netherland West Indies and this country at rates ranging from 26 to 28 cents.

Although, generally speaking, the tone of the motor-fuel market appeared softer at North Atlantic terminals, there were upward movements on the low side at Baltimore and Boston. The Baltimore adjustment moved the minimum for 65-octane gasoline up to 6½ cents, an advance of a quarter of a cent. The Boston advance moved 60-64-octane motor fuel up to 6½ cents. Prices for the better grades of motor fuel at all eastern points are showing greater resistance to pressure than is the case in the inferior gasolines.

Industrial activity in this country will exert an important influence on residual-fuel and lubricating-oil markets over the next few months. The impression exists in New York that industrial activity may show a tendency to taper off in the reasonably near future, although definite signs toward this end are at least obscure. Lifting of the arms embargo by Congress may have a healthy effect on industrial-fuel-oil consumption, and steel plants are reported booked practically to their capacity for at least 6 months.

Most industrial plants have been operating on schedules anticipating revision of the neutrality act, and, consequently, it cannot be expected that any important increase in consumption will result. There is the possibility, of course, that necessity of sending belligerent boats to this country for necessary supplies will make available greater cargo space and in that way stimulate export movement. The immediate outlook is, however, for a contraction in marine-fuel-oil consumption which will result the minute American boats are prohibited from sailing to belligerent countries and through other dangerous waters.

Gulf Coast Market

HOUSTON, Tex., Nov. 6.—Gulf Coast refinery prices are unchanged. Increased movement of motor fuel out of several Gulf Coast ports the past week has lent a slightly brighter touch to this market, relieving some of the bearish pressure occasioned by accumulating supplies in coastal refineries. An additional substantial volume of material is scheduled to be lifted the remainder of the week and early next year.

Most of the cargoes, so far as determined, are destined for the Atlantic seaboard with little change in the export picture. Shipments to belligerent countries are virtually at a standstill, being limited to an occasional British or French tanker. It is reported several neutral countries are planning to increase their contract takings.

Gulf Coast refiners think the ban on shipments to war zones in American boats will have little or no effect on the export market.

The motor-fuel market continues to lack firmness although quotations seem pegged. Additional business now is not a matter of price concessions so sellers are not inclined to make further reductions. Sellers who last week intimated they might take less than 6 cents for 68-70 octane for immediate shipments now say 6 cents is bottom.

A number of refiners, principally independents, are becoming concerned about the increasing tightness of crude, and a continued shortage is expected to become a factor in the refined market. Several refiners claim to be having extreme difficulty in obtaining sufficient supplies of crudes of the types needed, and report having to pay mounting

(Continued on Page 95)

A. P. I. Weekly Refinery Statistics

FIGURES FOR THE WEEK ENDING NOVEMBER 4 UNAVAILABLE OWING TO NEW YORK ELECTION HOLIDAY

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ending October 28, 1939	230,453,000 barrels
Week ending October 21, 1939	229,127,000 barrels
Week ending October 29, 1938	275,824,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of November 7, 1939

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank wag.
Chicago, Ill.	15.1	13.1	4.0 *	10.0
Decatur	15.1	12.1	4.0	8.5
Joliet	15.1	13.6	4.0	10.0
Peoria	15.1	13.6	4.0	10.0
Quincy	14.9	13.4	4.0	9.8
Davenport, Ia.	15.1	13.6	4.0	†10.0
Des Moines	14.9	13.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	†10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	9.4
Minneapolis	16.5	15.0	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.4	5.0	10.0
Milwaukee	16.3	14.8	5.0	10.2
Detroit, Mich.	13.6	12.1	4.0	7.6
Grand Rapids	13.5	12.0	4.0	9.7
Saginaw	14.8	13.3	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	15.3	5.0	†10.7
South Bend	16.8	15.3	5.0	†10.0
Fargo, N. D.	17.7	16.2	5.0	11.6
Huron, S. D.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	12.9	4.0	8.0
St. Louis*	14.7	13.2	4.0	8.0
St. Joseph	14.4	12.9	4.0	7.9
Wichita, Kans.	13.3	10.6	4.0	7.4

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off; minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective September 18, 1939, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gal., 9 cents; 100-149 gal., 8 cents; 150 gal. and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gal., 8.25 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex furnace oil, 1-149 gal., 8.25 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex Grade A, 1-399 gal., 5.25 cents; 400 gal. and over, 4.25 cents. Stanolex Grade B, 1-799 gal., 5.25 cents; 800 gal. and over, 4.25 cents. Stanolex Grade C, 1-999 gal., 4.5 cents; 1,000 gal. and over, 3.5 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Tank-wag. cons'r.	Divided dlr.	Inc. tax	tank wag.
Ohio points	16.0	15.0	5.0	*13.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Cons'r. tank car	Dlr. tank wag.	Inc. tax	tank wag.
Atl'tic City, N. J.	11.6	12.7	4.0	7.60
Newark	11.6	12.7	4.0	7.60
Annapolis, Md.	13.35	14.35	5.0	9.5
Baltimore	12.75	13.75	5.0	7.5
Cumberland	14.15	16.15	5.0	10.0
Wash'gton, D. C.	11.00	12.0	3.0	9.5
Danville, Va.	14.95	17.45	6.0	12.9
Norfolk	13.75	16.25	6.0	11.0
Petersburg	14.05	16.55	6.0	11.7
Richmond	14.05	16.55	6.0	10.7
Roanoke	15.25	17.75	6.0	11.0
Charles'n, W. Va.	14.55	17.05	6.0	12.6
Parkersburg	13.85	15.35	6.0	11.2
Wheeling	14.85	16.75	6.0	12.2
Charlotte, N. C.	16.90	18.40	7.0	11.8
Hickory	17.45	18.95	7.0	12.3
Mt. Airy	17.30	18.80	7.0	12.2
Raleigh	16.65	18.15	7.0	11.5
Salisbury	16.95	18.45	7.0	11.9
Charleston, S. C.	14.75	17.25	7.0	10.6
Columbia	15.60	18.10	7.0	11.5
Spartanburg	16.30	18.80	7.0	12.2

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery; 100,000 gal. per year, consumer tank-car price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less .5 cent per gallon. The above policy also applies in South Carolina effective January 23, 1939.

Discounts for kerosene, 1 cent off tank-wagon price for 25 gal. or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline			Kero.
	Cons'r. tank wag.	Net dlr.	Inc. tax	tank wag.
Atlanta, Ga.	20.0	17.0	7.0	10.0
Augusta	20.5	17.5	7.0	10.0
Macon	21.0	18.0	7.0	10.5
Savannah	19.5	16.5	7.0	9.0
Birmingham, Ala.	21.5	18.5	8.0	9.0
Mobile	21.5	18.5	9.0	9.0
Montgomery	22.5	19.5	9.0	11.0
Jackson, Miss.	19.5	16.5	7.0	10.0
Vicksburg	19.5	16.5	7.0	9.5
Jacksonville, Fla.	19.0	16.0	8.0	8.5
Miami	19.5	16.5	8.0	7.0
Pensacola	21.5	18.5	9.0	8.5
Tampa	20.5	17.5	8.0	8.5
Lexington, Ky.	19.5	16.5	6.0	10.0
Covington	18.0	15.0	6.0	9.5
Louisville	18.5	15.5	6.0	9.0
Paducah	18.5	15.5	6.0	9.0

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Cons'r. tank car	Dlr. tank wag.	Inc. tax	tank wag.
Philadelphia, Pa.	12.0	13.5	5.0	10.0
Pittsburgh	13.0	14.5	5.0	10.5
Allentown	12.5	14.0	5.0	10.5
Erie	13.0	14.5	5.0	10.0
Scranton*	13.0	14.5	5.0	10.5
Altoona	13.0	15.0	5.0	10.5
Dover, Del.	...	14.0	5.0	10.5
Wilmington	...	13.5	5.0	9.75

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon.

*Voluntary discount of 1 cent allowed to dealers only.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank truck	Serv. sta.	Inc. tax	tank wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	20.0	21.0	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	†13.75
Spokane	21.5	22.5	6.0	†16.75
Tacoma	20.0	21.0	6.0	†13.75

*Includes 5-cent state tax. †Includes 0.25-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Cons'r. tank car	Dlr. tank wag.	Inc. tax	tank wag.
Albany	12.5	14.6	5.0	7.80
*Met. N. Y.:				
Manhat., Bronx	12.6	13.4	5.0	8.00
Queens, Br'klyn	12.6	13.4	5.0	8.00
Staten Island	12.6	13.4	5.0	8.00
Buffalo	13.1	14.5	5.0	7.70
Rochester	13.3	14.0	5.0	8.30
Syracuse	13.1	14.5	5.0	8.30
Boston	11.4	13.0	4.0	8.00
Portland, Me.	12.5	14.3	5.0	8.00
Manchester, N.H.	13.2	15.0	5.0	8.40
Burlington, Vt.	13.0	15.2	5.0	8.20
Springfield, Mass.	12.1	13.5	4.0	8.20
Worcester	12.0	13.5	4.0	8.20
Hartford, Conn.	11.8	13.3	4.0	7.90
New Haven	11.7	12.8	4.0	8.00
Providence, R. I.	11.4	13.3	4.0	8.00

*Does not include 2 per cent city sales tax, which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective February 15, 1939, the company changed its commercial consumer policy in New York and New England points for tank-wagon delivery to the following: Annual purchases 10,000 gal. and under, tank-car price plus 2 cents per gallon; annual purchases 10,000 gal. up to 50,000 gal., tank-car price plus 1.5 cents per gallon; annual purchases 50.000 to 200,000 gal., tank-car price plus 1 cent per gallon; annual purchases 200,000 gal. and over, tank-car price plus ½ cent per gallon. Private consumers pay undivided dealer price, plus 2 cents per gallon. Private consumers receiving full compartment deliveries of at least 200 gal. receive a discount of ½ cent per gallon.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag.
Denver, Colo.	15.5	...	5.0	11.5
Grand Junction	18.5	...	5.0	15.0
Pueblo	16.0	...	5.0	9.0
Casper, Wyo.	17.5	...	5.0	11.5
Cheyenne	15.5	...	5.0	13.0
Billings, Mont.	18.5	...	6.0	13.0
Butte	20.0	...	6.0	15.5
Great Falls	19.5	...	6.0	15.5
Helena	20.5	...	6.0	15.5
Salt Lake, Utah	17.5	17.5	5.0	16.0
Boise, Idaho	21.1	21.1	6.0	18.0
Twin Falls	21.1	21.1	6.0	18.0
Albu'que, N. M.	17.0	17.0	6.5	10.0
Roswell	15.5	15.5	6.5	8.0
Santa Fe	17.5	17.5	6.5	10.0

*Includes city tax of 0.5 cent. †Includes state tax of 1 mill.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Cons. tank car	Dlr. tank wag.	Inc. tax	tank wag.
New Orleans, La.	15.25	17.75	8.0	†11.0
Baton Rouge	15.25	17.75	8.0	‡10.5
Alexandria	15.25	17.75	8.0	‡12.5
Lafayette	15.00	18.00	8.0	‡11.0
Lake Charles	15.25	17.75	8.0	‡12.5
Shreveport	14.00	16.50	8.0	‡11.0
Knoxville, Tenn.	18.50	21.00	8.0	13.0
Memphis	16.50	19.00	8.0	11.0
Chattanooga	18.00	20.00	8.0	12.0
Nashville	17.50	20.00	8.0	11.0
Bristol	18.75	20.00	8.0	13.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

†Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Nebraska

STANDARD OIL CO. (NEBRASKA)

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank wag.
Omaha	16.9	15.2	6.0	9.8
McCook	16.5	14.4	6.0	9.0
Norfolk	17.3	15.8	6.0	9.5
North Platte	17.8	16.3	6.0	10.0
Scottsbluff	18.5	15.5	6.0	11.4

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Tank-wg. dlr.	Includes tax	tank wag.
Texarkana, Ark.	14.0	5.0	8.0
Fort Smith	14.5	5.0	7.5
Little Rock	17.25	7.5	8.0
Muskogee, Okla.	12.0	5.0	7.0
Oklahoma City	11.0	5.0	6.5
Tulsa	12.0	5.0	7.5

The tank-wagon price is the price to all classes of trade.

Texas

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank wag.
Dallas, Tex.	12.0	16.0	5.0	7.0
Fort Worth	15.0	19.0	5.0	8.0
Houston	14.0	18.0	5.0	8.0
San Antonio	14.0	18.0	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada

3-Star Imperial Gasoline

IMPERIAL OIL, LTD.

	Tank wag.	Inc. tax	Kero. tank wag.
Halifax, N. S.	24.5	10.0	18.5
St. John, N. B.	24.5	10.0	18.5
Montreal, Que.	23.0	8.0	15.5
Toronto, Ont.	23.5	8.0	16.0
Hamilton, Ont.	23.5	8.0	16.0
Winnipeg, Man.	26.5	7.0	20.5
Brandon, Man.	28.0	7.0	22.9
Regina, Sask.	25.5	7.0	20.5
Saskatoon, Sask.	28.0	7.0	23.0
Edmonton, Alta.	25.9	7.0	20.9
Calgary, Alta.	23.0	7.0	18.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. of New Jersey October 31 advanced tank-wagon kerosene 0.5 cent in Baltimore; November 1, advanced tank-wagon kerosene 1 cent in Norfolk.

Standard Oil Co. (Nebraska) November 1 reduced dealer gasoline 1.8 cents in McCook; November 3, reduced dealer gasoline .2 cent in Omaha; October 10, reduced tank-wagon kerosene 0.7 cent in North Platte.

Socony-Vacuum Oil Co., Inc., October 31 advanced dealer tank-wagon gasoline 0.7 cent in Burlington.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of November 7, 1939

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:	
62 octane and below	.04⅜
63-66 octane	.04⅝ .04¾
67-69 octane	.04¾ .04⅞
70-72 octane (regular)	.05⅛ .05¼
60-62 400 grades:	
62 octane and below	.04⅜ .04½
63-66 octane	.04⅝ .04¾
67-69 octane	.04¾ .04⅞
70-72 octane (regular)	.05⅛ .05¼
68-70 360	.05 .05⅛

NORTH TEXAS—

U. S. Motor grades:	
62 octane and below	.04⅜
63-66 octane	.04⅝ .04¾
67-69 octane	.04¾ .04⅞
70-72 octane (regular)	.05⅛ .05¼
60-62 400	.04⅜ .04½

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:	
62 octane and below	.04⅝ .04¾
63-66 octane	.04⅝ .05¼
67-69 octane	.05¼ .05½
70-72 octane (regular)	.05¾

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:	
62 octane and below	.04¾
67-69 octane	no quotations
70-72 octane (regular)	.05¼

CHICAGO (Based on Group 3)—

U. S. Motor grades:	
62 octane and below	.04½ .04⅝
63-66 octane	.04¾ .04⅞
67-69 octane	.05 .05⅛
70-72 octane (regular)	.05¼ .05⅜
60-62 400 grades:	
62 octane and below	.04½ .04⅝
63-66 octane	.04¾ .04⅞
67-69 octane	.05 .05⅛
70-72 octane (regular)	.05¼ .05⅜
68-70 360	.05 .05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor	.05
65 octane	.06½ .07
72-74 octane (regular)	.06½ .07

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06¼ .08
58-60 400, 65 oct. and higher	.07¼ .09

EAST COAST (domestic)—

U. S. Motor, 65 and above:	
*New York (Bayonne)	.06½ .06¾
Philadelphia	.06¼ .06¾
Baltimore	.06¼ .06¾
Charleston, S. C.	.06¾ .07

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:	
Below 60 octane	.05½ .05⅝
65-67 octane	.05¾ .06
68-70 octane	.06 .06¼

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.04¼
Grade 18-55	.05 .05⅛

NORTH TEXAS—

Grade 26-70	.04
Grade 18-55	.04¾

CALIFORNIA—

75-85 375-390	.05½ .06¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70	.04⅝

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03½ .03⅝
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.03⅝ .03¾
46-48 gr., 210-230 i.b.p., 480-max., e.p.	.03⅞ .04⅛

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03⅝ .03¾
42-44	.03¾ .03⅞

NORTH TEXAS—

41-43	.03⅝ .03¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.03½ .03⅝

ARKANSAS (Ark. and N. La. del.)—

41-43	.03⅝

PENNSYLVANIA (inland refineries)—

45	.04¾ .05
46	.05 .05⅛
47	.05 .05¼

CHICAGO (Based on Group 3)—

41-43	.03⅝ .03¾
42-44	.03¾ .03⅞

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04¾ .05¾

NEW YORK (Bayonne, N. J.)—

41-43	.04⅞ .05

***GULF COAST (domestic)—**

41-43	.04½ .04¾

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03½ .03⅝
No. 1 prime white, 38-42	.03⅝
No. 1 straw, 38-40	.03½ .03¼
No. 2 straw, 32-36	.03⅛ .03¼
No. 2 dark, 32-36	.02¾ .02⅞
No. 3 zero to 15, 28-32	.02⅞ .03
No. 3, 15 and above, 28-32	.02⅝ .02¾

NORTH TEXAS—

No. 1 prime white, 38-42	.03¼ .03⅜
No. 1 straw, 38-40	.03⅛ .03¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03 .03⅛

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.03¼

CHICAGO (Based on Group 3)—

Range oil	.03⅝ .03⅝
No. 1 prime white, 38-40	.03⅝ .03½
No. 1 straw, 38-40	.03¼ .03⅜
No. 2 straw, 32-36	.03⅛ .03¼
No. 2 dark, 32-36	.03 .03⅛
No. 3, zero to 15, 28-32	.03 .03⅛
No. 3, 15 and above, 28-32	.02¾ .02⅞

NEW YORK (Bayonne, N. J.)—

*No. 1	.04⅜ .05
*No. 2	.04⅝ .04½
*No. 4	.04¼ .04½

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02⅝ .02¾
No. 5, low pour point, 18-22	.70 .75
Below 14 fuel oil, industrial	.50 .55

NORTH TEXAS—

U.G.I. gas oil, under 35	.02⅝ .02¾
No. 5, low pour point, 18-22	.70 .75
Below 14 fuel oil, industrial	.50 .55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70 .75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝ .02⅞
No. 5, low pour point, 18-22	.70 .80
No. 5, 15 and above, 18-22	.60 .70
No. 6, low pour point, 10-16	.60 .70
No. 6, 15 and above, 10-16	.45 .50

PENNSYLVANIA (inland refineries)—

36-40	.04⅛ .04½

CALIFORNIA—

Los Angeles:	
30-40 gas oil, per bbl.	1.15 1.30
24 plus diesel, per bbl.	1.00 1.30
24 plus diesel (bunkers)	1.30 1.40
12-16 (bunkers at tidewater)	.70 .90
10-16 (cargo lots)	.65 .75
12-17 (tank cars)	.60 .85
10-17 (high sulfur)	.50 .70
San Joaquin Valley:	
10-18 (tank cars)	.55 .75
24 plus diesel, per bbl.	1.00 1.25
San Francisco:	
24 plus diesel, per bbl.	1.45 1.50
24 plus diesel (bunkers)	1.55 1.60
10-16 (bunkers)	.90 .95

GULF COAST—

No. 2 fuel	.04¼
43-47 diesel	.04
48-52 diesel	.04¼
53-57 diesel	.04½
58 and above diesel	.04¾
Bunker C (bulk cargoes)	.95 1.00
Bunker C (bunkers)	.95 1.00

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil	.04¼
28-30 diesel (lighterage 6¼c per bbl.)	1.75
28-30 diesel (tank cars)	.04¼
Bunker C (to ocean-going ships in N. Y. Harbor)	1.15
Industrial fuel (tank cars)	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25	.27
150-160 D, 0-10	.24
150-160 D, 15-25	.23
150-160 E, 15-25	.23
100-110 D, 0-10	.23
Steam refined:	
600 dark green (untreated)	.08

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):	
10 pour point	.29 .33
15 pour point	.28 .32
25 pour point	.24½ .30
Steam refined:	
600	.14½ .17
650	.16 .20
600 flash	.16½ .21
630 flash	.20 .24

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:	
150-3	.13
180-3	.14
180-4	.13½
200-3	.14½
200-4	.14
250-3	.16
250-4	.15½
280-3	.17
280-4	.16½
300-3½	.17½
400-3½	.18½
100-2½ paraffin oil	.07½
15-25 pour point:	
200-3	.14
200-4	.13½
250-3	.15
250-4	.14½
280-3	.16½
280-4	.16

GULF COAST—

Pale oils:	
200-3	.07 .07½
300-3	.07¾ .08
500-3½	.08½ .09
750-3½	.09 .09½
1,200-3½	.09⅝ .09⅞
2,000-4	.10
Red oils:	
200-5-6	.06¾ .07¼
300-5-6	.07½ .07¾
500-5-6	.08¼ .08¾
750	.08¾ .09¼
1,200-5-6	.09⅝ .09⅝

CALIFORNIA (moving to dom. market)—

Pale oils:	
100-2½-3	.07¼ .08
200-2½-3	.07¼ .08
300-2½-3	.07¼ .08
400-3-4	.07¼ .08
450-3-4	.07¼ .08
550-3-4	.09 .11
600-3-4	.09 .11
Red oils:	
200-4-5	.07¼ .08
300-5-6	.07¼ .08
350-5-6	.09¼ .11½
400-5-6	.09¼ .11½
450-5-6	.09¼ .11½
500-5-6	.09¼ .11½
600-5-6½	.09¼ .11½
700-6½ plus	.09¼ .11½
750-6½ plus	.09¼ .11½
900-6½ plus	.09¼ .11½

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:	
Zero pour point	.31 .32
10 pour point	.30 .31
15 pour point	.29 .30
25 pour point	.23 .28
200 vis. at 70° F., 3 color:	
Zero pour point	.33 .34
10 pour point	.32 .33
15 pour point	.31 .32
25 pour point	.25 .32

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.0625 .0650

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale	.0600 .0625
124-126 (A.m.p.) w.c. scale	.0600 .0625

NEW YORK—

Wax in bags fully refined:	
123-125 (A.m.p.) wax	.0505
125-127 (A.m.p.) wax	.0520
128-130 (A.m.p.) wax	.0560
130-132 (A.m.p.) wax	.0585
133-135 (A.m.p.) wax	.0615
135-137 (A.m.p.) wax	.0640
Crude scale:	
124-126 (A.m.p.) w.s.	.0600
124-126 (A.m.p.) y.s.	.0575
Petrolatum in barrels, carload lots:	
Dark green	.03½
Amber	.03⅞
Extra amber	.04
Lily white	.06½
Snow white	.07⅛
Cream	.05½

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.05 .05¼
60-62 400	.05½ .06
65 octane	.06¼ .06½
68 octane	.06¾ .07
70 octane	.07 .07⅛

LOS ANGELES—

U. S. Motor grades:	
60-65 octane	.05½ .05¾
65-69 octane	.05¾ .06⅛
Above 69 octane	.06¼ .06½

KEROSENE

GULF COAST—

41-43 prime white	.05¼
41-43 water white	.05¼

LOS ANGELES—

41-43 water white	.05 .05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s.) in bbls.—

Cylinder stocks:	
600 S.R. unfiltered	.25 .26½
650 S.R. unfiltered	.27 .28½
600 flash, S.R.	.28 .30½
630 flash, S.R.	.30 .34
Bright stock:	
8 color	.40 .42

NEUTRAL OIL

200-3 color	.38 .43
150-3 color	.37 .40

PARAFFIN WAX

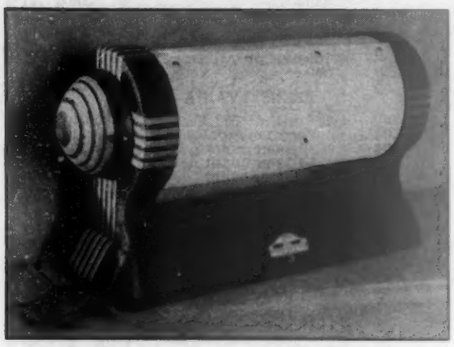
NEW YORK (prices per pound)—

123-125 A.m.p.	.0505
125-127 A.m.p.	.0650
128-130 A.m.p.	.0675
133-135 A.m.p.	.0750
135-137 A.m.p.	.0850
Crude scale:	
122-124 w.s.	.0600
124-126 w.s.	.0600
122-124 y.s.	.0575
124-126 y.s.	.0575

New or Improved Equipment

Minute-Man Blueprint Machine Adapted for Any Size Office

Designed to be of practical use in the small office as well as the large engineering department, the Paramount Minute-Man blueprint machine is said to make



perfect blueprints in 1 minute or less. Occupying a desk space of 26 by 9 in. it makes prints in any size up to 18 by 24 in. The original and sensitized paper are wrapped around a crystal-clear glass cylinder 8 in. in diameter and 19 in. long, and held in place by a heavy canvas preshrunk adjustable cover. Two photoflood bulbs inside the cylinder are controlled by a "mark time" timer which assures proper length of exposure for best printing. The low operating and maintenance cost and the simplicity of operation make it an effective piece of equipment for any size department. The machine is manufactured and marketed by Paramount Engineering Co., 5707 West Lake Street, Chicago.

Buchanan Represents McEvoy

McEvoy Co., 600 Milby Street, Houston, Tex., announces the appointment of T. J. Buchanan as sales representative for the West Texas and New Mexico territory. Mr. Buchanan has had wide experience in the oil fields as roughneck, tool pusher and driller and as a result he is thoroughly familiar with practical problems encountered in the field. His headquarters as McEvoy representative will be at 707-A Carrizo Street, Midland, Tex.

Bulb in New Burgess Lantern Changed by Flip of Thumb

A new light-weight safety lantern that incorporates an almost instantaneous emergency bulb switch, together with other improvements, is announced by Burgess Battery Co. Freeport, Ill.

This RL-1 safety lantern has a light-weight body with rust-resistant trimming and adjustable aluminum handle. It is equipped with an Aizac nontarnish replaceable reflector, which throws a strong focused beam clearly outlining objects at 500 ft. The overall height, with the handle extended, is 12 inches. The emergency lamp feature consists of a throw switch which both slips the burned-out lamp out of position and replaces it with the auxiliary bulb—in focus—with a flip of the thumb. Colored bulbs may be used, if desired. The light is visible from all four sides.

Here and There With Men Who Manufacture Equipment

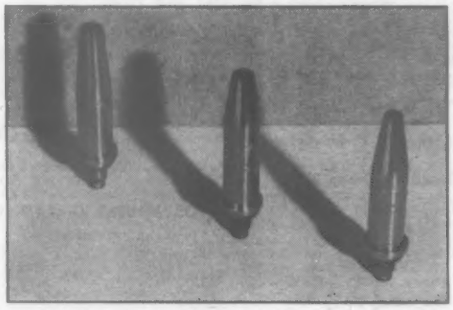
V. E. Busby, European sales representative for Mason-Neilan Regulator Co., Boston, left last week for Rome to resume his contacts with the company's oversea distributors and other buyers of refinery control equipment. He crossed by Clipper plane from New York.

John A. Roebling's Sons Co., Trenton, N. J., manufacturer of wire and wire rope, insulated wire and cables, and wire cloth and netting, has removed its New York offices from 107 Liberty Street to the twentieth floor at 19 Rector Street.

Phil B. Moore, president and general manager of H. P. Bowser Manufacturing Co., Tulsa, announces that the name has been changed to Equaflow Cooler Corp. The company manufactures and distributes engine-jacket water coolers.

Oxweld Nozzles Produce Cuts of Exceptional Smoothness

Operators of oxyacetylene cutting machines will be glad to hear that precision cutting nozzles are now available which make cuts of such exceptional quality that usually no subsequent machining is required.



In the new Oxweld nozzles, the cutting oxygen passage is highly polished, thus producing a smooth gas flow without deflection or turbulence. This results in a clean, smooth face of cut.

The preheat holes are smaller and spread over a larger circle, so that the heat is less concentrated on the line of cut. This results in a squarer, cleaner, sharper upper edge, a smaller kerf, and a saving in preheat gases.

The new nozzles are said to make it easy for the average operator to obtain consistently good cuts day in and day out. Further information can be obtained from the nearest office of Linde Air Products Co.

Lane-Wells Head Sees Uptrend

The outlook for drilling and production is generally encouraging for 1940, according to Rodney S. Durkee, president of Lane-Wells Co. Mr. Durkee, accompanied by M. E. Montrose, general sales manager, has completed a tour of the company's branches in the Mid-Continent and Gulf Coast areas and in the East and Canada. Conditions were found satisfactory, with indications of increased activity. Lane-Wells is planning to complete several new field units for gun-perforator and electrologging services. Increased demand for the company's technical oil-field services will keep the Los Angeles plant at capacity operation producing needed trucks and equipment during the coming year.

New Marmon-Herrington Line Suited for Oil-Field Uses

Engineering improvements in design are announced by Marmon-Herrington Co., Indianapolis, Ind., for the 1940 models of All-Wheel-Drive trucks and commercial

and passenger cars. In the heavy-duty series of trucks and trailer tractors there are more than 30 models of four-wheel and six-wheel units powered with Hercules gasoline and diesel engines, each of which is available with standard or special body and operating equipment for oil-field transportation, logging, road building, snow removal and other difficult services. These units range in size up to 25-ton load capacity for trucks and up to 50 tons or more for tractors.

Supplementing and completing the line, the company converts all standard Ford trucks and passenger and commercial cars to All-Wheel-Drive, thus giving the buyer all the advantages of high tractive ability in medium and light-weight vehicles. These All-Wheel-Drive Fords defy difficult terrain, such as rock and brush-covered hills and plains, deep loose dirt, sand, mud, or snow. The relatively lighter weights, coupled with the greatly increased traction of four or six driving wheels, enable them to go places and do things once regarded as impossible.

Each year as Ford Motor Co. makes chassis and body improvements, Marmon-Herrington engineers make the necessary changes to apply traction and power to all the wheels.

"Blackie-Brownie" White Wing Hunt Attracts Many Oil Men

Here is one of the 13 planes that arrived at the Mission, Tex., airport for the recent "Blackie-Brownie" annual White Wing hunt in the Rio Grande Valley. The passengers, who had just stepped from the plane: Jim Teague, Humble Oil & Refining Co. engineer; H. E. Brigham, Hogg Oil Co.; Frank Watts, Humble purchas-

ing agent; Ted Hulburt, Baker Oil Tools, Inc., pilot; Carl Riestle, Humble engineer.

Approximately 100 men attended the three-day hunt as guests of Halliburton Oil Well Cementing Co. and Brown Oil Tools, Inc.

Line Pipe Coated and Wrapped in Field by Portable Machine

Coating and wrapping line pipe by machine in the field eliminates hazards of damage to the coating while in storage or in transit. For oil, gas, and gaso-

line pipe lines, only external protection is needed. For water mains, both external wrapping and internal coating are required.

Portable wrapping machines have been developed for both external and internal protection. They are operated as the pipe is unloaded. This method permits protection of the exact lengths required for the job. These machines handle pipe from 1 to 30 in. in diameter, with a capacity of 1 mile to 2 miles a day, depending upon the size of the pipe. They require a minimum of labor, operate to the owner's specifications and permit inspection as the line is laid. Further information can be obtained by addressing Non-Corrosive Products Co., 2016 Laura Avenue, Huntington Park, Calif.

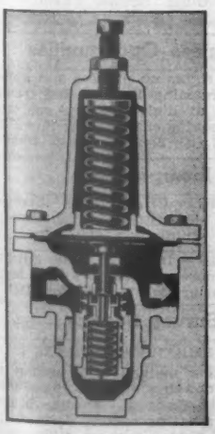
Stanbery D&B Sales Manager

R. B. Stanbery has been appointed manager of sales of the D&B Mid-Continent division of the Emsco Derrick & Equipment Co. His office will be at 7626 Maple Road, Dallas, Tex. Since 1935 Mr. Stanbery has been manager of the subsurface production equipment division of Continental Supply Co., exclusive distributors of D&B products. Before that he was in charge of California and export sales for D&B in that company's home office in Los Angeles.

His return to D&B in his new capacity brings important sales, service, and manufacturing experience to the organization.

Fisher Announces Extension of Its Line of Reducing Valves

An improved self-contained reducing valve, Type BB, is announced by Fisher Governor Co., Marshalltown, Iowa. This valve is recommended especially for installations on furnace humidifiers, steam tables, sterilizers, air equipment, and other appliances where space saving is an important factor.



Type BB is suitable for receiving a varying or high pressure of air, water, noncorrosive gas or oil at the inlet side and automatically delivering a constant reduced pressure to the outlet side. It can be had with either bronze or high-tensile iron body. Single-seated inner valves with special composition valve disks are standard equipment. Stainless-steel bevel-seat inner valves are furnished for use in steam service.

Either laminated stainless-steel or composition diaphragms can be furnished. Calibrated steel springs specially plated against rust or corrosion permit easy throttling control over the reduced pressure range. Valve and parts are protected by a self-contained strainer of fine-mesh screen formed around the valve cylinder. Stuffing boxes and parts that might bind have been completely eliminated to provide friction-free performance. All operating parts are easily renewable.

Hendrick Injection-Type Units Help Solve Mixing Problems

Hendrick Manufacturing Co., Carbondale, Pa., has developed the Hendrick injection-type mixer, designed to handle liquid-liquid and gas-liquid mixing problems in which there is necessity for reacting or blending gaseous or liquid treating agents with a tank-confined liquid charge in such a fashion that immediate and uniform dispersion of the treating agent is assured and the rate of addition of the treating agent is sharply controlled.

The unit consists of a turbine element, overhung and underhung by hollow stator ring elements. The latter are perforated on their rotor-faced surfaces, these perforations serving as ejection holes for the treating agent, which in turn is fed to the stator hollows by means of the indicated feed lines or pipes. The stator members also bear on their rotor-faced surfaces shear ribs, which cooperate with the ribs on the stator element to shear the injected liquid charge.

Use of this unit has reduced the reaction-times required by many oxidation, hydrogenation, and similar gas-liquid mixing processes. Similarly, it has proved of benefit to liquid-liquid reactions, such as sulfonations, nitrations, general acid treating of slurries, etc., and to reactions requiring freedom from local overconcentration of the treating agent.

The injection-type mixing unit is especially adapted for flue-gas absorption, oxidations and hydrogenations, halogenations, sulfonations and nitrations, washing or scrubbing problems, aeration of slurries, emulsification problems, blending of materials of widely differing sets, viscosities, specific gravities, etc.

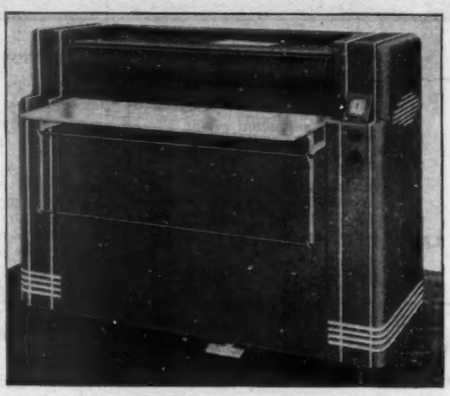
Boardman Novo Representative

N. H. Boardman has been appointed factory representative in the Mid-Continent for Novo Engine Co., Lansing, Mich. Mr. Boardman spent considerable time in the Novo plant actually working on the equipment which the company builds for the oil fields. He will work with National Supply Co. men as National is the exclusive Novo distributor in the oil field. He goes to the Mid-Continent field after 2 years in the Chicago territory.

Mr. Boardman is taking with him on his first trip through the territory the Novo display trailer, which contains the new Novo pumper engines, compressor sets for diesel-engine starting, and self-priming centrifugal pumps. The equipment in the trailer will be demonstrated to field offices of oil companies.

Mercury Arc Is Light Source in New Blueprint Machine

A new-type blueprint machine, embodying as a major improvement the Hanovia Chemical & Manufacturing Co.'s new high-pressure mercury quartz lamp, will be



ready for announcement shortly after January 1, according to Charles Bruning Co., Inc., 100 Reade Street, New York. The Hanovia lamp takes the place of carbon arcs. Hanovia Chemical & Manufacturing Co. guarantees a lamp life of at least 1,000 hours without any appreciable diminution of light volume during the life of the lamp. Test runs on a model of the new Bruning machine are reported to have been made at a speed of 20 ft. per minute from new pencil and ink tracings, using medium-speed blueprint paper.

This new quartz lamp gives positive, uniform distribution of light to the entire printing surface, without flickering, and eliminates the necessity of changing and trimming carbons. The current consumption is said to be only one-third of that ordinarily required.

In addition to the Hanovia lamp, the Bruning machines will embody innovations in safety, improved feeding, speed control, drive, elimination of tracing slippage and wear, designed to insure easier, faster, and more economical operation and improved printing results.

Trade Literature

LUNKENHEIMER CO., Cincinnati, Ohio.—Catalog 78, complete line of bronze, iron and steel valves; boiler mountings, lubricating devices; oil and grease cups, whistles, cocks, fittings, etc.

NATIONAL CARBON CO., 30 East Forty-second Street, New York.—Bulletin, carbon, graphite, and "Karbate" pipe and fittings.

ALLIS-CHALMERS MANUFACTURING CO., Milwaukee, Wis.—Folder, "It Pays to Buy the Equipment That Pays for Itself."

WHEELCO INSTRUMENTS CO., 1929 South Halsted Street, Chicago.—Bulletin 2850-1, Wheelco surface temperature pyrometer.

GATES RUBBER CO.—Current issue of Industrial News.

CHICAGO PNEUMATIC TOOL CO., 6 East Forty-fourth Street, New York.—Bulletin 767, diesel-driven compressors.

New home of Meria Tool Corp., Dallas, Tex.

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SACRIFICE 40-acre Oil Lease, Chaves County, for only $10.00, full price. Guarantee title. P. O. Box 191, Clovis, N. Mex.

CALIFORNIA Oil Land Surveys and Subdivisions. L. H. Gowdy, Licensed Surveyor and Civil Engineer. San Marino, Calif.

NEW MEXICO WEEKLY OIL SCOUT REPORT. — Send for sample copy. Roy G. Barton, Box 968, Hobbs, N. M.

WANT CAPITAL to invest in perpetual mineral rights in North Permian Basin in Texas and New Mexico in major company blocks on geophysical highs. Rapid development under way now. Will take interest after all monies have been repaid. Address Box J-990, The Oil and Gas Journal, Tulsa, Oklahoma.

FOR SALE Oil and gas leases and small production located in Kentucky shallow field, and leases located in Clay County, Tenn. Have for sale two tracts of proven Fluorspar and Zinc deposits; reports furnished on request. W. P. Harley, Bowling Green, Kentucky.

KENTUCKY AND INDIANA

Two wildcat blocks in Kentucky and Indiana. Drilling in Indiana, moving in Kentucky. Brokers write.

BURGER & SEIP

P. O. Box 426 Paducah, Kentucky.

INVITE inspection of drlg. blks. good bets for prod. at around 1800 ft. Write J. L. Dahl, 417 Lamar Ave., Paris, Texas.

MAKE money with wildcat leases in Southwest Texas. 50c per acre up. Address P. O. Box #410, Austin, Texas.

FOREST CITY BASIN—N.E. Kansas Oil Leases. Large and small tracts. Margaret Haynes, N. Topeka, Kansas. R. #3.

WANTED—Producing leases for South American and Canadian corporations. Address Arthur Nickell, Fayette, Missouri.

80 ACRE LEASE
OFFSETTING PRODUCTION

1320 feet from producer made 200 bbls. initial 41 gravity, at 972 feet. Sell at $5.00 acre plus $400 in oil. Double checked for production. Geologist-Geophysicist, 912 S. 2nd., Lawton, Oklahoma.

MISSISSIPPI THE NEW OIL STATE

Leases, royalties and drilling blocks apply J. P. Fraim, Edwards Hotel, Jackson, Miss.

FOR Concordia Parish, La. leases, blocks 320 to 15,000 acres, write C. W. Deming, Registered Dealer, Waycross, Georgia.

NEW MEXICO
STATE OIL AND GAS LEASES

Buy on known structures where major companies own leases. 50c per acre. 5c rentals. Write for information.

HARRY S. WRIGHT, STATE LESSEE
Box 166, Council Bluffs, Ia.
Box 347, Santa Fe, New Mexico.

Leases and Drilling Blocks

WILDCAT leases in southern Illinois. 50c acre up. Well going down.

BURGER OIL CO.
P. O. Box 426 Paducah, Kentucky.

MISSISSIPPI
SOUTH'S WONDER OIL STATE

600 acres ⅞ths form 88, 1 yr. free, 25c rentals, MONTGOMERY COUNTY, due east of Smackover. Two wells to drill and all acreage this county leased Oklahoma oil operators. Abstract furnished. $1200 cash. 4 sands here less than 3500 feet. Real opportunity. Box 648. Memphis, Tenn

DRILLING DEALS WANTED
Will drill for cash and interest.
CLAUDE L. JORDAN, Bristow, Oklahoma.

KENTUCKY

I own in fee the oil and gas rights under 20,000 acres located in McCreary County on a structure which I will lease for development on a reasonable basis

W. H. O'BRIEN
Lawrenceburg, Indiana.

FOR SALE—Oil lease on 160 acres of Reno County, Kansas, land. Less than four miles from production and between two fields. Write F. E. MELBERG, Partridge, Kansas.

FOR LEASE—100 acres producing oil land. Write or contact Joshua Bland, 1012 Cherry St., Orange, Texas.

LEASES, 10,000 acres, southern Illinois and southern Indiana. John F. Hanes, P. O. Box 464, Olney, Ill.

Financing

CAPITAL SEEKERS

Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD Fox Theater Building, Detroit, Michigan

CORPORATE ORGANIZING and FINANCING—RE-ORGANIZATIONS
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New York, N. Y.

180 RECENT underwriters of smaller security issues $4. Valuable bulletin FREE with order. JOHN MORRIS, Box 5411, Philadelphia, Pennsylvania.

Legal Blanks

SINCE 1908 Burkhart's legal forms—servicing Mid-Cont. oil fields, including Ill., La., Mo., Ind. & Ky. Free catalog & samples. Burkhart Ptg. & Sta. Co., 115 So. Cinn., Tulsa, Oklahoma.

Mailing Lists

ROYALTY Lists. Oil Investor Lists Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa Oklahoma.

Situations Wanted

MANUFACTURERS REPRESENTATIVE An experienced and well acquainted salesman desires additional lines to sell, in Mid-Continent Area. Commission or Salary. Box K-291, The Oil and Gas Journal Tulsa, Oklahoma.

REFINERY ENGINEER—12 years' experience in oil refinery drafting, estimating, cost control and field work. Last 8 years with one major company holding responsible position. College graduate. Address Box K-310, The Oil and Gas Journal, Tulsa, Oklahoma.

ACCOUNTING SERVICE, monthly operating and financial reports, etc. prepared for oil operators whose volume of work does not warrant employment of full time accountant. Houston and vicinity. Address Box K-331, The Oil and Gas Journal. Tulsa, Oklahoma.

Graduate B.S. in mining and geology with experience in surveying, mapping, and drilling wants connection with an active organization in the development of raw material sources. Married. Will go anywhere in the U.S.A. or Canada. Compensation secondary to opportunity. Address Box K-332, The Oil and Gas Journal, Tulsa, Oklahoma.

OIL Accountant. Experience—development—production—refining. Excellent references. Address Box K-334, The Oil and Gas Journal, Tulsa, Oklahoma.

OIL SPECIALIST tax consultant. Age 37. C.P.A. 14 yrs. experience, which includes systematizing, financial reports, and diversified public accounting. Highest credentials as to integrity and creative ability. Address Box K-130, The Oil and Gas Journal, Tulsa, Oklahoma.

INSTRUMENT ENGINEER

Graduate Chemical engineer with more than five years of major company experience and two years as service engineer for instrument manufacturer. Refinery experience includes shift operations, lab, process safety, as well as three years as instrument man. Location immaterial. Reply Box K-351, The Oil and Gas Journal, Tulsa, Oklahoma.

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Brokers — Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

B. D. BUCKLEY

Paul Brown Bldg., St. Louis, Mo.

PRODUCING royalty investments wanted. Sebago Oil Co., 719 McBirney Bldg., Tulsa, Oklahoma.

WILL BUY Producing West Texas and New Mexico Royalties. Oscar L. Grimes, Tulsa Loan Building, Tulsa, Oklahoma.

Help Wanted

WANTED: Young technical graduates to train for positions as Field Service Engineers for manufacturer of electric pyrometers and automatic control equipment. Requirements include outstanding personality, highest character references, engineering education, electrical, mechanical, chemical or metallurgical plus background of industrial plant earning experience. Excellent opportunities for promotion after substantial period of thorough training. Candidates must be "mechanically inclined" evidencing natural ability for training work in assembly calibration and test laboratories. Marked proficiency also desired for studies in application engineering for adapting automatic control to advanced industrial processes. Individuals will be given special consideration who have worked in instrument maintenance departments in process plants having installations of modern pyrometers. Write stating age, education, experience and salary desired. Address Box K-350, The Oil and Gas Journal, Tulsa, Oklahoma.

SALESMAN in each settled production area. Good thing. Eclipse Chemical Co., Box 2603, Tulsa, Oklahoma.

Business Opportunities

PATENT rights on process and apparatus for overcoming the freezing troubles encountered at high pressure gas wells. All surface equipment. Address Box K-341, The Oil and Gas Journal, Tulsa, Okla.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Survey Service

REMEMBER EAST TEXAS

When all other methods fail, employ my divining or dowsing method. If oil exists this methods finds it. Faults, broken, treacherous areas accurately defined. Our Watson #2, first producer Wilmington, Calif. field, located by this method. More reliable than mechanical geophysics. Ask any unbiased oil authority. Many years' experience. A wise man investigates. George Miller, 1548 Post, Torrance, Calif.

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Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

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We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL

Tulsa, Oklahoma

REFINERY EQUIPMENT—UNITED REFINERY

COMPLETE 3,000 BBL. SKIMMING PLANT — RUSSELL, KANSAS

Foster-Wheeler Fractionating Column — 6'6"1Dx72' high. New Taylor Instruments throughout. Heat Exchangers, Hot Oil Pump Steam Engine Driven, Two Pipe Stills. 1 - 3" Tubes — 1 - 2½" Tubes.

WILL SELL ALL OR ANY PART

WIRE — PHONE — WRITE

SONKEN-GALAMBA SUPPLY COMPANY

W. C. Berry or H. J. Galamba,
Riverview at Second, Kansas City, Kansas

Robt. W. Duden,
2100 S. Union, Tulsa, Oklahoma

EMERGENCY NEED?

Freight Cars; any kind
Locomotives; all types
Relaying Rails
Freight Car Repair Parts
Perhaps *we* can supply your requirements, and *immediately?*
OTHER MACHINERY and EQUIPMENT, TOO!

IRON & STEEL PRODUCTS, INC.
13412 S. Brainard Ave., Chicago, Ill.
"Anything containing IRON or STEEL"

COMPLETE PIPE YARD—WESTERN KANSAS. 2" 12½" 18" Bignall Keeler Pipe Machines, Westinghouse 350 Ampere Welder Truck trailer all Inventory at very low price. Address 553 North Fountain, Wichita, Kansas.

MACHINE TOOLS FOR SALE

1—20" x 10' Geared Head Motor Driven Lathe. 1—#14 Brown & Sharpe Plain Grinder. 1—#3 B&K Pipe & Bolt Machine; 1—1½" Landis Double Head Bolt Machine; 1—24" Wood Planer; 1—36" All Metal Band Saw, 1—52" Radial Drill. Nolan Sales Corporation, Tulsa, Oklahoma.

REFINERY FOR SALE—Well equipped, one still, 250-barrel capacity; located on seven-acre tract at Fredonia, Kans.; local market for all refined products; also sufficient crude oil for operations; bargain for cash. Address T. D. HAMPSON, Fredonia, Kansas.

ATTENTION ILLINOIS OPERATORS

Priced for immediate disposal

1 Complete power rig, with 2—225 H. P. Le Roi engines with gear box transmissions, 6" unitized four speed draw works 7¾" x 14" pump, rotary table, crown block, traveling block, swivel, and 3,200 ft. 4½" full hole drill pipe, etc.

Also have 2 Ford trucks, 3 to 7 ton, 12 speed Brown-Lipe transmissions, Ruxtel type TRF 600 differential, duals, oil field bodies, winches, good condition, original cost $3,150.

4,000 ft. draw-works unit with HXE Hercules engine and three speed Brown-Lipe transmission.

Above equipment located in Fairfield, Illinois, area.

LUCEY PRODUCTS CORPORATION
Tulsa, Oklahoma.

---

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

FOR SALE

25,000 Ft. of 2" Pipe
10,000 Ft. of 2½"
35,000 Ft. of 3"
20,000 Ft. of 4"
10,000 Ft. of 6"
10,000 Ft. of 8", all threaded and collared line pipe strictly No. 1, located in Shreveport, Louisiana.

We also have 30,000 Ft. of 6" screw line Pipe in Oklahoma and 10,000 Ft. of 8" in Missouri.

Wire, Write or Phone for Prices.

Louisiana Iron & Supply Co.
Shreveport, Louisiana

TRACTORS

Government crawler type Caterpillars, 5 ton $375, 10 ton $695, Slightly used. Perfect condition.

O. C. EVANS
Mt. Sterling, Ky.

WE OFFER—STEEL DERRICKS
Fresh Painted—Excellent condition.
We still have a few left.
WERTZBERGER DERRICK CO.
P. O. Box 796
Tulsa, Oklahoma

FOR SALE OR TRADE: Absorption gasoline plant. Capacity 11,000,000 cu. ft. of gas per day at 250# pressure. Practically all Braun equipment, in good condition. Sacrifice. P. O. Box 187, Tyler, Texas.

TRACTORS

FOR SALE: One Caterpillar Diesel "75," 22" track, complete with LeTroneau cable controlled bulldozer, overhauled, $2,000.00 Pickwick Dam, Tenn. Also: One Allis Chalmers, Model L, 22" track, Baker hydraulic bulldozer, overhauled, $1750.00 Athens, Ala. Further particulars address O. C. Evans, Mount Sterling, Kentucky.

WRECKING

Former SHELL REFINERY,
Arkansas City, Kansas
and
YARHOLA GASOLINE PLANT
Drumright, Oklahoma

Storage Tanks
Heat Exchangers
Absorbers, Condensers
Towers, Regulators
Electric Motors
Prefabricated buildings
Industrial light plant
Pipe—Valves—Fittings

Write for Catalog

BROWN - STRAUSS CORPORATION
Main Plant and Office:
1446 Guinotte
Kansas City, Mo.

Office at
Shell Refinery Site
Arkansas City, Kansas

FOR SALE: Approximately two thousand feet of 9⅝" O.D. 19.6 Lbs. per foot. Plain end, 40' random lengths Line Pipe in No. 1 condition. Arab Gasoline Corporation. Eastland, Texas.

6—4x8 National Triplex pumps. 4—10x18 Gaso Duplex power pumps, belt driven. 2—50-hp. Superior oil engines. 3—35-hp. Superior gas engines. 1—Galvanized iron steel frame building 28'x68'.

A. C. ASKEW
Box 73 Whittier Station, Tulsa, Okla.

PRICED FOR QUICK DISPOSAL

2—Complete modern power rigs.

No. 1—2-225 H. P., Le Roi Engines, 7¾" x 14" pump, 8" draw works, roller bearing blocks, 8" oil bath swivel, 27½" oil bath rotary, 4,000 ft. 4½" full hole drill pipe, all handling tools and supplementary equipment. Located near Nocona, Texas.

No. 2—Same as above with exception of 6" draw works, 6" swivel and 3,000 ft. of 4½" drill pipe. Located Oklahoma City.

LUCEY PRODUCTS CORP.
Tulsa, Oklahoma.

USED POWER UNITS

15 PA-100 INTERNATIONAL POWER UNITS

6 Cylinder, 5" bore x 5½" stroke—100 H.P.

6 DKHU WAUKESHA POWER UNITS

6 cylinder, 5" bore x 5½" stroke—100 H.P.

All of the above are in first class condition and are equipped with Wico magnetos, oil bath air cleaners, oil filters, gas mixing valves, stub shafts, and radiators with sheet steel housing.

Subject to prior sale.

Truck Equipment Company
800 East First St., Tulsa, Okla.

Equipment Wanted

WANTED High Pressure Portable air compressor about 150 cu. ft. capacity good for 1,000 bbl. What have you? P. O. Box 592, Artesia, New Mexico.

WANTED—Portable core drilling rig, complete for 1200-ft. holes. Sutter Well Works, Pass Christian, Miss.

WANTED 18,000 or 20,000 gallon Propane tank. Must pass code requirements. Wire price and location F.o.b. cars. Ben B. Bodne, Charleston, South Carolina.

WANTED truck mounted National, Franks, Failing or similar rotary. Capable 1500 feet 6" hole. Full price, condition tools, available, location, terms, etc. First letter. Address Box K-340, The Oil and Gas Journal, Tulsa, Oklahoma.

For Sale—Maps

TEXAS and NEW MEXICO
UP-TO-DATE OIL DEVELOPMENT MAPS
Zingery Oil Map Co., Fort Worth, Tex

R. B. ROBINSON MAPS
Jackson, Miss. 312 Century Bldg.
Ownership maps of Yazoo and forty other Mississippi counties.

MISSISSIPPI MAP
Shows drilling tests, dry holes with elevations and total depths. Scale 1" = 8 miles. Size 26" x 48". Prices: Paper, $7.50—linen, $10.00.

E. C. JACOBSON MAPS
801 McBirney Bldg. Phone 2-1952
Tulsa, Okla.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Ranches—Farm Land

RANCHES and FARMS
Oklahoma, Texas, New Mexico; New low bargain prices—mountains or plains. Howard Ingram, Perrine Building, Oklahoma City, Oklahoma.

Canadian Fields

(Continued from Page 83)

Home Oil Co.'s No. 1, LSD 16, has resumed drilling from 6,665 ft. after completing a fishing job.

Grease Creek-Northwest Co.'s No. 1, LSD 2, Section 13-29-7w5, is below 5,220 ft. in the Blairmore. On the Kootenay Dome Roxana Petroleums' No. 1, Section 8-24-7w5, is below 5,456 ft. in the Devonian.

The Jumping Pound test well, Brown Consolidated's No. 1, LSD 3, Section 36-24-5w-5, is below 6,247 ft. in the limy sandstone series at the bottom of the Blairmore.

A. P. Con.-Sheppard Creek's No. 1, LSD 6, Section 7-16-2w5, is below 1,450 ft. In Section 20-14-4w5, Anglo-Canadian Oil Co.'s No. 1, on Savannah Creek, is below 3,135 ft. in the Blairmore.

At Del Bonita Terminal Oil Co.'s No. 2, NW¼ Section 7-1-21w4, completed at 5,211, has been given a second acid treatment and is testing. At Spring Coulee E. L. Cord's No. 1, LSD 16, Section 35-3-23w4, is below 5,800 ft. in the Ellis sand.

Steveville Structure

C. P. R. Princess' No. 1, drilled by the Standard of British Columbia, LSD 13, Section 22-20-12w4, is below 2,390 ft., and making excellent time. This is the first well of the California subsidiary to go down in Canada.

In Section 9-22-12w4, Anaconda Oil Co.'s No. 1, LSD 15, is below 3,330 ft. after getting the Madison at 3,209 ft., having resumed drilling after a recementing job at the lime contact.

East Central Alberta

In the Lloydminster field Triangle's No. 3, NW¼ Section 14-49-1w4, is below 275 ft. South of Lloydminster Highwood-Sarcee Oil Co.'s No. 1, LSD 1, Section 36-47-2w4, is below 608 ft. after completing a cement job and resuming drilling from 440 ft.

Montreal Alberta Oil Co.'s No. 1, LSD 2, Section 15-45-7w4, is preparing to resume drilling from 3,505 ft.

Ontario Drilling

In the Malahide field Union Gas Co.'s No. 24, Lot 11, Concession 4, finished a producer at 1,092 ft. Union's No. 22, SW¼ Lot 27, Concession 5, also finished a producer at 1,532 ft. Production figures were not immediately available. Union's No. 25, Lot 16, Concession 5, Malahide is below 700 ft. No. 26, Lot 16, Concession 5, Malahide is below 950 ft. A new well in this field, Union's No. 28, Lot 6, Concession 4, Malahide is rigging.

Union Gas Co.'s No. 47, Lot 20, Concession 15 Raleigh, is below 745 ft.

Gulf Coast Markets

(Continued from Page 89)

premiums, several Texas refiners have obtained some relief from coastal Louisiana crudes but even in that district there is little free oil. It is said even Southwest Texas crude is not available except at posted prices of sweet crude.

Lubricating oils tightened further. Practically no material is available for present or future shipment that is not committed by contract. Increased movement on contract is making the situation more acute.

Kerosenes, gas oils and fuel oils also continued strong and in good demand. Any easing up in kerosenes the previous week apparently has been eliminated.

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